DOCUMENT RESUME

ED 222 235 JC 820 510

TITLE Statements on Preparation in English and Mathematics: Competencies Expected of Entering Freshmen and Remedial and Baccalaureate-Level Course Work.

INSTITUTION Academic Senate for California Community Colleges, Sacramento.

PUB DATE 10 Aug 82

NOTE 100p.; Prepared with the California State University and the University of California. Contains small print.

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.

DESCRIPTORS Articulation (Education); *Basic Skills; *College Credits; College Mathematics; Community Colleges; Mathematics Curriculum; *Minimum Competencies; Minimum Competency Testing; Postsecondary Education; Reading Skills; Remedial Instruction; State Universities; *Statewide Planning; Student Placement; Writing Skills

IDENTIFIERS *California; Mathematics Skills

ABSTRACT

These joint statements by the Academic Senates of the California Community Colleges, the California State University, and the University of California address the concern that students are underprepared for college-level work. First, "Statement on Competencies in English and Mathematics Expected of Entering Freshmen," which was prepared for students, parents, high school teachers, counselors, and administrators, establishes requisite competencies in reading, writing, arithmetic, algebra, geometry, and advanced mathematics. Second, "Statement on Remedial and Baccalaureate-Level Course Work," which is addressed primarily to postsecondary institutions, recommends that students be required to demonstrate these competencies before enrolling in baccalaureate-level course work; emphasizes the distinction between remedial and baccalaureate-level course work in English and mathematics as the basis for internal and transfer credit policies; and includes recommendations for skills assessment. The bulk of the report consists of appendices which describe and illustrate the various English placement exams used in California postsecondary education; present the College Board's recommendations regarding academic competencies in speaking, listening, reasoning, and studying; list the recommendations of two professional associations regarding mathematics curricula; and provide sample problems in mathematics to illustrate the skills expected of students who have completed specific high school mathematics courses. (Author/KL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

STATEMENTS ON PREPARATION IN ENGLISH AND MATHEMATICS: COMPETENCIES EXPECTED OF ENTERING FRESHMEN AND REMEDIAL AND BACCALAUREATE-LEVEL COURSE WORK

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Jonnah J. Laroche

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

X Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

JC

prepared by

The Academic Senates of the California Community Colleges,
The California State University and the
University of California

8-10-82

STATEMENTS ON PREPARATION IN ENGLISH AND MATHEMATICS: COMPETENCIES EXPECTED OF ENTERING FRESHMEN and REMEDIAL AND BACCALAUREATE-LEVEL COURSE WORK

Prepared by

The Academic Senates of the California Community Colleges,
The California State University, and the
University of California

INTRODUCTION

The Academic Senates of the California Community Colleges, The California State University, and the University of California have developed these two statements on preparation in English and mathematics because of widespread concern among college and university faculty that students are underprepared for college-level work. For students to be successful in college work, it is essential that they be adequately prepared, particularly in the basic areas of English and mathematics. The "Statement on Competencies in English and Mathematics Expected of Entering Freshmen" is addressed primarily to students preparing for college, their parents, high school teachers, counselors, and administrators. The "Statement on Remedial and Baccalaureate-Level Course Work" is addressed primarily to postsecondary institutions. These institutions will have to provide remedial education, at least for the near future; therefore, it is important that internal credit policies, as well as transfer credit policies among the various segments, are based upon a common standard for the awarding of baccalaureate credit. This statement also includes recommendations for assessing the requisite skills of students before they are admitted to baccalaureate-level courses in English composition and mathematics.

In addition to these two statements, the appendices provide further information concerning the preparation of students for college. Appendix I describes and illustrates the English placement examinations used in the three segments of California public higher education. Appendix II reprints portions of the College Board's Preparation for College in the 1980s, specifically the recommended academic competencies in speaking and listening, reasoning, and studying. Appendix III reprints the "Recommendations of the Board of Governors of the Mathematical Association of America and the Board of Directors of the National Council of Teachers of Mathematics." Appendix IV provides sample problems in mathematics to illustrate the concepts and skills expected of students who have completed specific high school mathematics courses.

The development of this document has been aided by the availability of material from the Advisory Commission on Articulation between Secondary Education and Ohio Colleges, the High School-University Curriculum Liaison Committee of the University of Wisconsin, Madison, the College Board's Project EQuality, the California Postsecondary Education Commission's Blue Ribbon Subcommittee on Writing Standards, the "Handbook for Planning an Effective Writing Program" prepared by the California State Department of Education, the UC/CSU Workgroup on Diagnostic Testing in Pre-Calculus Mathematics, the Board of Governors of the Mathematical Association of America and the Board of Directors of the National Council of Teachers of Mathematics.

The three Academic Senates will request that statements of expected competencies in other academic disciplines be developed by appropriate faculty groups. However, competence in English and mathematics is so fundamental to most baccalaureate-level studies that a statement on expected competencies for these disciplines has been developed first for broad dissemination. This was done in the hope that this statement can serve as a model for the development and dissemination of expected competencies in other disciplines.

The Academic Senates urge that these statements be widely distributed to high school students, their parents, teachers, counselors, and administrators in order that they have a clear understanding of the expectations of college and university faculty. Further, the Academic Senates urge that secondary and postsecondary educators take measures to implement the recommendations contained in these statements as educational policy in California.

STATEMENT ON
COMPETENCIES IN ENGLISH AND MATHEMATICS
EXPECTED OF ENTERING FRESHMEN

A substantial number of students who enter California colleges and universities are not prepared for college-level work. Deficiencies in basic skills, particularly in English and mathematics, prevail despite the special importance of competence in these areas. Adequate preparation in English and mathematics is needed to provide basic skills in communication and analysis, not only to prepare students for additional work in these disciplines but also to provide access to other disciplines and prepare students for a wide spectrum of career choices.

Students who plan to continue their education at a college or university must have a clear understanding of what basic academic skills will be expected of them. As beginning freshmen, students should have acquired the competencies in writing, reading, and mathematics described in this

statement. The importance of acquiring these skills cannot be overstated. These skills are an essential foundation for successful college and university course work. The minimum proficiencies now required for high school graduation are not sufficient to provide this foundation.

There are, of course, varied and complex causes of underpreparation of entering college freshmen; however, the one of concern here is a lack of understanding among students, parents, and educators of the competencies expected of entering college students. It is the responsibility of college and university faculty to specify and communicate these competencies. It is the responsibility of secondary school teachers to determine the methods of instruction by which these competencies can be taught.

To aid in providing adequate student preparation in English and mathematics, we recommend the following:

1. The curriculum for students planning to pursue a baccalaureate education should include at least four years of English and at least three years of mathematics.

2. The academic program taken in the senior year of high school should include one year of English and one year of mathematics.

3. Diagnostic examinations to assess student competencies in English and mathematics should be given no later than the junior year in high school. The results of these examinations should be used to counsel students concerning their study in the senior year.

4. The results of competency assessment in English and mathematics of entering students at the colleges and universities should be made available to the students' respective high schools so that appropriate evaluation of instructional programs can be made.

5. Counseling of students and their parents concerning college preparation should occur as early as possible to provide a foundation for successful college and university study and to broaden the spectrum of career choices. Early counseling is especially needed for groups which are now underrepresented in California colleges and universities.

6. At all levels of education, from elementary school through college, grades in English and mathematics should be based upon achievement rather than upon effort or attendance so that students will receive accurate assessment of their competencies.

At various times during the preparation of this statement, English and mathematics faculty from the three systems of public higher education in California assisted in the development of the following material. Consultation also occurred with secondary educators and parents. It is recognized, of course, that it would be difficult to expect unanimous agreement among all educators in the State of California on every detail in the material which follows. However, it was the consensus of the Academic Senates that the competencies outlined in this statement represent the core of the necessary skills in English and mathematics needed by entering college freshmen regardless of intended major or the specific admission requirements of the institution the student plans to attend.

Both admission requirements and recommended preparation that prescribe the number of years of study in English and mathematics are important, but neither is sufficient for defining the level of preparation needed by entering college freshmen; seat time does not guarantee that students will attain the expected levels of competence in these subject areas. The emphasis during the recommended years of study should be upon the development of the necessary skills in English and mathematics.

ENGLISH

Writing Skills

Clarity in writing reflects clarity in thinking. College and university faculty expect students to be able to understand, organize, synthesize, and communicate information, ideas, and opinions. Students must also be able to make critical judgments, to distinguish primary and relevant ideas from those that are subordinate or irrelevant. Students will be required in their college courses to demonstrate these abilities by writing compositions, reports, term papers, and essay examinations. Because the learning process as well as the quality of the student's written work depends upon these abilities, it is crucial that these abilities be developed before students enter college.

Emphasis upon the following writing skills is not meant to diminish the importance of other forms of writing or an appreciation of literature. However, the skills listed below are fundamental for successful baccalaureate-level work.

1. The ability to generate ideas about which to write;

2. The ability to formulate a single statement that clearly expresses the central idea of one's essay;

3. The ability to construct a paragraph that develops and supports the paragraph's main idea with examples or reasons;

4. The ability to organize paragraphs into a logical sequence so that the central idea of the essay is developed to a logical conclusion;

5. The ability to use varied sentence structures and types effectively in order to indicate the meaning, relationship and the importance of ideas;

6. The ability to write sentences with precise and appropriate words, to distinguish between literal and figurative use of language, and to avoid inappropriate jargon and cliche;

7. The ability to vary one's choice of words and sentences for different audiences and purposes;

8. The ability to present one's own ideas as related to, but clearly distinguished from, the ideas of others, which includes the ability to use documentation and avoid plagiarism;

9. The ability to support one's opinions and conclusions, including the appropriate use of evidence;

10. The ability to use dictionaries and other reference materials for the purpose of checking words and facts used in one's writing; and

11. The ability to proofread one's essay for errors and omissions of both form and substance, to revise and restructure where ideas are poorly organized or where evidence is lacking, to correct the draft for errors in capitalization, spelling, and punctuation, and to produce a finished paper relatively free of sentence fragments, comma splices, agreement errors, and improper pronoun references.

While the mastery of these skills is a cumulative process that begins in the lower grades and extends beyond college, entering students must have competence in the above skills for successful work in baccalaureate-level courses. The University of California, The California State University, and many California Community Colleges require entering students to demonstrate their level of competence before they may enroll in freshman composition courses. Increasingly, college students who have skill deficiencies are required to overcome their deficiencies through remedial work, which will not receive baccalaureate credit.

At no level of education should the teaching of good writing skills be considered the responsibility only of teachers of English. Students should be required to write regularly and frequently in other classes as well. Even though large classes make the teachers' careful evaluations of all written work difficult, students should receive evaluation of as much of their written work as possible.

Reading Skills

No matter what discipline a student pursues in college, his or her undergraduate education will require using the tools and techniques of information-gathering, analysis, and criticism. Most entering college freshmen will find that the amount and level of reading expected of them will be greater than that required in high school, necessitating increased reading speed and comprehension. Consequently, success in any undergraduate program depends upon good reading skills. Students should prepare themselves for college work while they are in high school by electing courses that require the reading of different kinds of material, such as literary works, scientific texts, and technical articles. In addition, they should be encouraged to do more reading than the minimum assignments, to look up the meanings and correct usages of words they do not fully understand, to know how to use the library, and to analyze and evaluate what they read.

Students who develop the following skills will be ready for the demands of the college classroom, for gathering and understanding information, and for evaluating the cogency of others' arguments. The following list of six basic reading skills is quoted from the College Board's Preparation for College in the 1980s:

- *The ability to identify and comprehend the main and subordinate ideas in a written work and to summarize the ideas in one's own words.*

- *The ability to recognize different purposes and methods of writing, to identify a writer's point of view and tone, and to interpret a writer's meaning inferentially as well as literally.*

- *The ability to separate one's personal opinions and assumptions from a writer's.*

- *The ability to vary one's reading speed and methods (survey, skim, review, question, and master) according to the type of material and one's purpose for reading.*

- *The ability to use the features of books and other reference materials, such as table of contents, preface, introduction, titles and sub-titles, index, glossary, appendix, and bibliography.*

- *The ability to define unfamiliar words by decoding, using contextual cluses, or by using a dictionary.*

In addition, students should have the ability to comprehend and use technical vocabularies and symbols, and should have achieved a degree of skill in assessing the validity and cogency of technical material.

Students must acquire these reading skills in order to be ready for the kinds of undergraduate assignments that demand critical, analytical thinking--assignments that require students to judge the validity and worth of a writer's thought and to prepare a logical, reasoned, and documented response to that thought.

While the writing and reading competencies outlined in the above portions of this statement are crucial for successful baccalaureate-level study, they are interrelated and interdependent with other competencies in speaking and listening, reasoning and studying. These additional competencies as presented in the College Board's Preparation for College in the 1980s can be found in Appendix II.

MATHEMATICS

As both the Mathematical Association of America and the National Council of Teachers of Mathematics have noted, "Mathematics is a highly structured subject in which various concepts and techniques are highly dependent upon each other." Reflecting this, the mathematics curriculum in high school and college consists of a sequence of courses, each with specific topics to be learned, to enable students to build upon their skills and understanding of mathematical operations. Students who have not acquired adequate skills and understanding at one course level will find it exceedingly difficult to comprehend the course content in the next.

The amount of recommended high school preparation in mathematics for college-bound students depends on the major field of study to be pursued in college, regardless of any specific college or university admission requirement in mathematics. Students who plan to major in a physical or life science, engineering, pre-medicine, other science-related fields, business, or economics should prepare for the college-level calculus requirement in these jors by taking four years of mathematics in high school and additional mathematics courses if available. Many

majors in the social sciences or other professional and pre-professional fields require baccalaureate-level statistics or calculus, sometimes both. Three years of high school mathematics are frequently required as preparation for statistics. To enable students to have full access to college and university programs and career opportunities, it is recommended that all college-bound students master the skills and techniques of high school mathematics through intermediate algebra. This means that all prospective college students should take as a minimum full-year courses in elementary algebra, geometry, and intermediate algebra. Students who must take intermediate algebra in college cannot expect to receive credit toward graduation for this course; it is considered remedial at the baccalaureate-level.

Students entering The California State University and many students entering certain programs in the University of California are required to take a diagnostic test in mathematics. Those students who do not demonstrate an acceptable level of proficiency will be required to take remedial course work to overcome their deficiencies. A mathematics course in the senior year of high school is, therefore, recommended to prepare students for these diagnostic tests.

The following recommendations for college-preparatory programs in mathematics have been developed in cooperation with the UC/CSU Workgroup on Diagnostic Testing in Pre-Calculus Mathematics, which includes teachers of mathematics from California high schools and community colleges:

1. Students should begin the study of algebra only after they have mastered arithmetic and the general mathematical skills outlined below in Section I.

2. All college-preparatory students should complete Algebra I, Geometry, and Algebra II. Content recommendations for these courses are contained in Section II.

3. Students who intend to pursue a baccalaureate degree in fields requiring the study of calculus should complete the courses in trigonometry, and analytic geometry and mathematical analysis, as outlined in Section III.

4. All college-preparatory students should take a mathematics course during their senior year of high school. This course could be Algebra II or a more advanced course depending on the student's background. Suggestions for advanced courses are contained in Section III.

5. All mathematics courses should emphasize problem solving. Students should be graded on their ability to solve problems correctly and to display problem-solving processes in a clear, complete, and accurate manner.

6. Computers and hand calculators should be used in imaginative ways to reinforce learning and to motivate students as proficiency in mathematics is gained. Students should develop adequate arithmetic skills in order to avoid reliance upon calculators for simple numerical computations. Calculators should be used to supplement rather than to supplant the study of necessary computational techniques.

7. Each college-preparatory mathematics course should include a comprehensive final examination.

8. All college-bound students should receive diagnostic assessment at the end of their junior year. Examinations used for this purpose--for example, those developed by the UC/CSU Workgroup on Diagnostic Testing in Pre-Calculus Mathematics or similar instruments--should measure achievement levels necessary for success in college mathematics and should provide guidance as to the selection of proper mathematics courses in the senior year.

9. Calculus, when taken by high school students either at their high school or at a nearby college, should be taken only by those students who are strongly prepared in algebra, geometry, trigonometry, and coordinate geometry, and who can demonstrate the mastery of these subjects. The calculus course should be a full year course and, if offered in high school, should prepare the enrolled students to take one of the College Board's Advanced Placement Calculus Examinations.

10. Understanding the application of mathematics to areas such as the physical, biological and social sciences, and business should be encouraged.

11. To the extent that familiarization with the computer is part of the high school mathematics program, such orientation should emphasize mathematical applications and should not displace essential mathematics topics or courses.

The Board of Governors of the Mathematical Association of America and the Board of Directors of the National Council of Teachers of Mathematics made other recommendations for the study of mathematics, which are endorsed by the Academic Senates. These recommendations can be found in Appendix III. The following constitutes a more detailed

specification of the topics to be covered and the skills to be developed in pre-high school and high school mathematics courses.

Section I. Arithmetic Skills To Be Introduced and Developed before the Study of Algebra Is Begun

The following basic arithmetical skills should be introduced and developed without the use of a calculator. These skills can then be extended and new mathematics topics learned by effective use of a calculator. The following list highlights major areas. This presentation is not as detailed as that employed for the high school program in Sections II and III.

- Computation with whole numbers, fractions, and decimals
- Understanding the meaning of fractions, decimals, and percent and their relationship to one another
- Translation of situations and verbal problems into mathematical statements
- Facility in, rounding, approximation, and numerical estimation; appreciation of reasonableness of numerical answers
- Understanding and use of basic arithmetic properties
- Use and interpretation of graphs and tables
- Computation with positive integral exponents and square roots of perfect squares
- Computation of perimeters, areas, and volumes of simple geometric figures

Section II. Topics To Be Included in Algebra I, Geometry, and Algebra II

All college preparatory students should complete courses (here called Algebra I, Geometry, Algebra II) which cover together all the topics listed below. The division of topics among these courses is not meant to be rigid. Certain topics may be introduced earlier or later. Topics introduced in one course should be reinforced in later courses. Applications and problem solving should be emphasized throughout.

Algebra I

- Arithmetic operations and absolute values of positive and negative rational numbers
- Arithmetic operations with literal symbols
- Linear equations and their graphs
- Inequalities
- Ratio, proportion, and variation
- Operations with integer exponents
- Operations with polynomials and rational expressions
- Systems of linear equations with two unknowns; solutions and applications
- Special products and factoring
- Solution of quadratic equations by factoring and formula
- Solution of elementary word problems
- Application of formulas for perimeters, areas, and volumes of simple geometric figures

Geometry

- Extensive reinforcement of the algebraic skills developed in Algebra I
- Basic postulates of Euclidean geometry; proofs of geometric theorems
- Angles, parallel lines, congruent and similar triangles, rectilinear figures, circles and arcs, Pythagorean theorem
- Application of formulas for perimeters, areas, volumes, and surface areas of geometric figures
- Geometric constructions; loci
- Coordinate geometry; proofs of geometric theorems by coordinate geometry methods

- Right triangle trigonometry
- Solution of elementary word problems
- Intuitive spatial geometry

Algebra II

- Simplification of algebraic expressions
- Fractional exponents and radicals
- Absolute value and inequalities
- Operations on polynomials
- Quadratic equations; completion of the square, quadratic formula, properties of roots
- Complex numbers
- Quadratic inequalities
- Graphing linear and quadratic functions and inequalities, determination and interpretation of slopes
- Solutions of equations with rational expressions
- Systems of linear equations with two and three unknowns: homogeneous, dependent, and inconsistent systems
- Polynomial equations
- Binomial theorem
- Arithmetic and geometric sequences and series
- Exponential and logarithmic functions and equations
- The function concept, including compositions and inverse functions; arithmetic operations on functions
- Solution of word problems, including estimation and approximation

Section III. Advanced Courses in Mathematics

All college-bound students should take a mathematics course during the senior year of high school. The mathematics studied during the senior year should reflect the student's college plans as well as mathematical ability and attainment.

Students who plan to take calculus in college should complete Algebra II prior to the twelfth grade. These students also should take a semester course in trigonometry followed by a semester course in analytic geometry and mathematical analysis. These courses should include the topics listed below.

Students entering fields requiring probability and statistics may elect such a course as an alternative to the course in analytic geometry and mathematical analysis. Computer science is a suitable elective for those planning to enter fields requiring extensive familiarity with computing. For strongly prepared students who have completed analytic geometry and mathematical analysis, a year course in calculus leading to one of the advanced placement examinations of the College Board is recommended. Other electives include linear algebra and integrated courses in science and mathematics. Topic descriptions for elective courses are not included.

Trigonometry (one semester)

- Trigonometric functions as ratios of lengths of sides of triangles and as circular functions
- Graphical characteristics of trigonometric functions
- Solution of right triangles
- Radian and degree measure
- Trigonometric identities, including double angle, half angle and addition formulas
- Laws of sines and cosines; solution of oblique triangles
- Reinforcement of function concept: exponential, logarithmic and trigonometric functions
- Inverse trigonometric functions and their graphs
- Solution of trigonometric equations
- Polar coordinates and vectors
- Trigonometric form of complex numbers and de Moivre's theorem

Analytic geometry and mathematical analysis (one semester)

- Coordinate geometry, including detailed treatment of conic sections

- Rational functions and their graphs
- Elementary functions and their inverses, including graphs of these functions

Review of polar coordinates and vectors

- Graphing in polar coordinates
- Introduction to linear algebra
- Mathematical induction
- Parametric equations and their graphs
- Lines and planes in space; three-dimensional coordinate geometry
- Introduction to vectors in space

Sample problems that illustrate expected competencies in the above topic areas are contained in Appendix IV.

STATEMENT ON REMEDIAL[1] AND BACCALAUREATE-LEVEL[2] COURSE WORK IN ENGLISH AND MATHEMATICS

The Academic Senates of the California Community Colleges, The California State University, and the University of California believe that the "Statement on Competencies in English and Mathematics Expected of Entering Freshmen" can be used by secondary schools to improve student preparation and opportunity for successful college and university study. This "Statement on Remedial and Baccalaureate-Level Course Work in English and Mathematics" addresses the importance of having entering students demonstrate their level of competence in English and mathematics to determine whether skills deficiencies need to be overcome before students enroll in baccalaureate-level course work in English composition and mathematics. This statement also provides a clear distinction between remedial and baccalaureate-level course work in English composition and mathematics so that the three segments of public higher education can develop uniform credit and transfer credit policies.

I. Competencies Expected of Students before Enrollment in Baccalaureate-Level Freshman Composition and Mathematics Courses

A. English

To be admitted to a baccalaureate-level freshman composition course, a student is expected to possess and demonstrate competence in those skills outlined in the appropriate sections of the "Statement on Competencies in English and Mathematics Expected of Entering Freshmen."

B. Mathematics

To be admitted to baccalaureate-level course work in mathematics, a student is expected to possess and demonstrate adequate competence in those skills expected of students who have successfully completed intermediate algebra. These skills have been outlined in the appropriate sections of the "Statement on Competencies in English and Mathematics Expected of Entering Freshmen."

---

[1] The term "remedial" is used specifically to distinguish such work from work acceptable to the baccalaureate degree.

[2] Note that the definition of baccalaureate-level work is not based on admission requirements. For example, even though plane geometry is not now specifically required for admission to any segment, course work in that subject is not defined as baccalaureate-level work.

II. Determination of Student Competencies in English and Mathematics

The determination of whether a student possesses adequate competencies necessary for entry into freshman composition courses or baccalaureate-level course work in mathematics shall be made by pragmatic evaluation.[3] This evaluation shall take the form of a segmentwide examination developed by a California college or university system or an examination that meets statewide standards in assessing the competencies specified in the "Statement on Competencies in English and Mathematics Expected of Entering Freshmen." The examination in English shall evaluate a student's writing and reading skills and include a written composition. The results of these evaluations in English and mathematics will determine whether a student shall be required to overcome deficiencies by taking course work designed primarily for this purpose.

III. Definition of Baccalaureate-Level and Remedial Course Work in English and Mathematics

A. English

Course work taken by a student to overcome deficiencies in writing and reading skills and to prepare the student for enrollment in a baccalaureate-level freshman composition course shall be considered remedial and shall not be granted baccalaureate credit. Workload credit--credit not applicable for graduation--should be given.

Each of the three public segments of higher education shall establish segmentwide policies and procedures to ensure that their respective campuses will identify remedial English courses, for which baccalaureate credit shall not be granted.

B. Mathematics

Course work taken by a student to overcome deficiencies in mathematics and to prepare a student for enrollment in a

[3] The UC/CSU Joint Workgroup on Diagnostic Testing in Pre-Calculus Mathematics has prepared examinations which test specific topic areas in basic algebra, intermediate algebra, and pre-calculus mathematics. The examinations are scored in such a way as to give both the student and teacher detailed information on the topic areas the student has mastered as well as the areas in which the student needs further review. Information on these examinations may be obtained by writing the Mathematics Diagnostic Testing Project, 987 Evans Hall, University of California, Berkeley, California 94720.

baccalaureate-level mathematics course shall be considered remedial and shall not be granted baccalaureate credit. Workload credit--credit not applicable for graduation--should be given. At the college and university level, remedial work in mathematics is defined as work in topics in arithmetic, elementary and intermediate algebra, plane geometry, and trigonometry. Trigonometry is considered remedial if taught as a separate course or taught in combination with more elementary subjects. A pre-calculus course, which has intermediate algebra as a prerequisite, containing topics from advanced algebra, elementary functions (logarithmic, exponential, and trigonometric), and analytic geometry, is not considered remedial.

Because of the degree of agreement on content expected in courses with given titles, it is easier to use course titles in mathematics to distinguish between remedial and baccalaureate-level work than is the case in other disciplines. However, even in mathematics there are variations in areas of study and level of mastery expected in courses with the same titles. For this reason, the content of college-preparatory course work in mathematics is specified in the appropriate sections of the "Statement of Competencies in English and Mathematics Expected of Entering Freshmen."

Lists of usual titles of mathematics courses, even with detailed specification of content, do not resolve the problem of specialized courses in mathematics--for example, those developed and taught by other departments to meet the particular needs of their majors. There is concern that many college departments are offering courses not at the baccalaureate level. The mathematics department or appropriate faculty body within each institution[4] should certify the level of any mathematics course[5] taught within that institution, using the guidelines indicated above.

---

[4] In The California State University and the University of California, such certification could be made by a campus course or curriculum committee.

[5] This is understood to be any course where the content is predominantly that normally taught in a mathematics course.

The Academic Senates of the three segments endorse the following statement approved unanimously by the Board of Governors of the Mathematical Association of America at its meeting on August 20, 1979:

> *College credit granted for work in mathematics must be carefully controlled. It should not be granted for distinctly high school level work.*[6] *Mathematics courses offered in college should be examined to determine the extent of their overlap with high school mathematics, and where that overlap is substantial the course should not provide credit toward college graduation....*

IV. Non-Transferability of Credit for Course Work in Remedial English and Mathematics

Inasmuch as remedial course work in English and mathematics shall not be granted baccalaureate credit, such course work, likewise, shall not be given transfer, i.e., baccalaureate, credit at the campuses of the California Community Colleges, The California State University, and the University of California.

Each of the three segments should institute policies and procedures to ensure that remedial course work in English and mathematics shall not be granted or receive transfer (baccalaureate) credit.

V. Admission by Intersegmental Transfer

Admission by intersegmental transfer should require that a student has at least met the receiving institution's English and mathematics admission requirements for beginning freshmen. All transferable course work must be at the baccalaureate level.

VI. Admission to Programs and Courses

The course work and levels of competency required for admission to specific programs and courses within the institutions of each segment shall be determined by the appropriate faculty body.

---

[6] Distinctly high-school-level work should be interpreted here as work which is not baccalaureate level, as defined earlier in this section.

APPENDIX I

COLLEGE AND UNIVERSITY ENGLISH PLACEMENT EXAMINATIONS

All segments of higher education in California--the Community Colleges, the State University, and the University--expect students to be competent writers when they enroll in college-level English courses and in all other college-level courses requiring writing.

To assess writing competence, most campuses of the three segments require entering students to take a placement examination consisting of either a multiple-choice test of language usage or a composition topic--or both. Although specific guidelines for scoring compositions will vary among the segments and among individual campuses, the procedures are nevertheless similar: compositions are scored holistically by at least two readers who assess the overall quality and effectiveness of the composition. Thus, readers assess thematic development and organization, diction and sentence structure, and grammar and mechanics.

For this appendix, sample student compositions from all three segments have been scored and rated as follows:

Clear Pass
Marginal Pass
Clear Fail
Marginal Fail

Passing compositions demonstrate the competence in written expression necessary for admission to regular freshman composition courses. Failing compositions demonstrate the need for remedial instruction. Marginal compositions are either passing but clearly flawed performances, or failing performances not without clear redeeming virtues.

ENGLISH PLACEMENT EXAMINATION INFORMATION

	Kind of Placement Examination	Availability of Examination and Scoring Guidelines
The California Community Colleges	If it gives one, each of the 107 campuses devises its own examination. Most campuses do give an exam. It may consist of objective questions or an essay topic or both. Following the exam, students are placed in appropriate courses.	Contact a campus's English Department chairperson for more detailed information about the examination and scoring guidelines, or if no examination is given, about placement procedures.
The California State University	All 19 campuses give the English Placement Test (EPT). The test consists of objective questions and one experienced-based essay topic. Students who score below 150 on this exam are required to take a remedial course.	For information about the EPT, write or call the following office to request a copy of the publication, English Tests: California State University Division of Educational Programs 400 Golden Shore Long Beach, CA 90802 This publication provides sample objective questions, sample student essays, and sample scoring guides.
The University of California	All 9 campuses require students who score below 600 on the College Board Composition Achievement Test to take a Subject A Essay Examination. Students who do not satisfy the Subject A requirement by passing this exam or by other means (see the UC section in this appendix), must take the campus's Subject A course.	The general catalog and admissions materials of each of the campuses provide general information regarding this system-wide requirement. Examination format and course work vary by campuses. Additional information is available upon request from a campus's Subject A Office or English Composition Office.

CALIFORNIA COMMUNITY COLLEGES

Although there is no standardized method of placement testing in the 107 community colleges, most campuses assess the writing competency of entering students in entrance examinations. Community colleges use either objective tests that include testing of reading comprehension, sentence structure, and mechanics; or they use combined objective and essay tests. Some campuses which use objective tests for placement administer essay examinations to students who request a change in placement.

As preparatory to English 1A, most community colleges offer a basic skills course, a developmental reading course, and a pre-English 1A course. The writing examples which follow illustrate the composition qualities that distinguish 1A from pre-1A papers. Essay topics at community colleges vary greatly--from topics which draw on student experience, to those which encourage argument, to those which are guided responses to reading passages. Three types of topics, from campuses in three different districts, are illustrated below.

California Community Colleges (CCC) Examination Number 1

Topic: If you had the choice between living in the country or in the city, which would you choose? Describe your choice and your reasons for having chosen it. You will have forty minutes to write your essay.

CCC Student Essay Number 1 - Clear Pass

When I was still quite young I was exposed to David Thoreau's "Walden Pond." I was enchanted by the peace, quietness and gentleness he described. It was in glaring opposition to the dirt, overcrowding and cacophony of the busy suburb in which I lived; I longed for a bit of the silent beauty found in nature. Periodic visits to my Grandfather's Minnesota farm whetted my appetite, and when I cried upon leaving, it wasn't homesickness I wept about. I didn't want to go home.

I was fortunate. I married a man equally disenchanted with city life, and after a few detours for college and jobs we moved back to the great open plains of South Dakota. Thoreau never visited South Dakota.

No gentle lady, this bit of nature's province! We tackled blizzards beyond our wildest imagination; cold so profound it froze the water vapors in our breath, seared our lungs and numbed our senses. The heat during the high summer months was unrelenting, robbing the very air of oxygen, punctuated by dazzling displays of lightning as the heat drove the clouds into frenzy.

I learned to respect nature. Rather than accept her gracious gifts of gentle rain and soft summer days, I fought her, worked with her, never took her for granted. I learned to adjust myself from lazy city living to life in the country I had never imagined. I would never go back!

There is so much life, even in the embattled South Dakota deserts--much silence and peace. Not Thoreau's gentle nature, but a land come to terms with the harshness of weather and soil, each flower, animal and human fitted carefully into a precarious ecological niche. Though we had to leave that place, I carry a bit of it with me. I'm not impressed by lavish displays of flowers and shrub anymore; fancy California landscaping is interesting but there is no struggle here. How much more precious the stunted sage clinging, as its kind have for centuries, to the arid plains. Each bird and flower becomes a special joy. They have survived the worst environment possible with grace, beauty and tiny perfection.

I could never live again in the city. I have been spoiled beyond redemption. Here, even in bustling California, I have my small open niche where birds fish in canals, cattle nibble my sleeves and there is peace and silence and space. I am not intruded upon, and I have great compassion for the millions less fortunate than I.

Comments

This paper is a thoughtful, sophisticated response to the topic. The effectiveness of word choice, variety in sentence length and pattern, and the use of appropriate detail mark the paper as a clear pass. Although there are occasional grammatical errors and word-choice blunders (the faulty reference in "it" in the first paragraph; the cliché, "whetted my appetite;") they are minor. The student does more than the topic requires, describes well, and maintains a strong sense of direction. The use of literary allusion adds depth to the personal response.

CCC Student Essay Number 2 - Marginal Fail

The country has always been the most preferable place to live, in my opinion. There is much to see in the great outdoors. The wildlife, the fresh air, and the lack of noise pollution are genuine advantages of country living.

The wildlife in the country is so extreme. A person can see horses, or perhaps a fox or a deer. I feel that wildlife should be, preserved. We take it for granted, when we should be protecting it. Wildlife is a precious gift God gave us, and I think we should take care of it.

The fresh air in the country is a valuable resource. It's good for the lungs, and very good for the body. Good health is one thing the American people lack. They don't take care of themselves like they should. The clean air in the country is a good way to start taking better care of ourselves. The fresh air in the country provides an excellent lifeline for the plants, animals, and the people.

The lack of noise pollution in the country provides an escape route for people in the city. Many people get tired of the same "rat-race", therefore they come to the country to get away from the pushing, and shoving at the office. It's so peaceful in the country, all you hear are birds churping, or a river running. It's a great way to relax, and enjoy your environment.

I have discuss my personal thoughts of living in the country. I

consider it the great outdoors. I enjoy natural things, and I feel the country is a natural place. The wildlife, the fresh air, and the lack of noise pollution are just a few of the many things I prefer about the country. I feel that nature is to be taken seriously; and that the only way to do this, is in the country.

Comments

This student introduces the paper's organizational structure by stating precisely the topics which will be developed in the body of the paper. However, the organizational framework is merely an outline for a paper which has very little development of the essay topic. The writer strays. Sentence structure shows a lack of sophistication, and word choice is sometimes inappropriate ("wildlife...is so extreme.") Ideas lack substance ("A person can see horses"). There are frequent punctuation problems--extra commas and comma splices. A major verb error ("discuss") and pronoun reference error ("This" referring to "nature is to be taken seriously") appear in the final paragraph. This student would benefit from a semester in pre-1A composition.

CCC Examination Number 2

Topic: Read the article by Terry Christensen. Identify his main point; agree or disagree with the point he makes; and explain your position by drawing on your own experience and knowledge. The paper you write will be evaluated on the basis of: (1) clarity of thesis; (2) adequacy of evidence and support; (3) soundness of organization; (4) correctness of paragraph and sentence structure; and (5) mechanical accuracy.

Reading Passage

HOW I GOT BUSTED IN THE CAMPUS BIKE CAPER

by Terry Christensen

Leaving my office at the university a little after five o'-clock, I must have looked like the stereotypical professor: corduroy, vest, briefcase, beard--everything but a pipe.

Little did I know the lesson that was in store as I unlocked and mounted my bicycle for the short ride home.

A few blocks from campus, as I slowed to talk to some neighborhood kids, a campus police car screeched to a halt behind me, lights flashing and siren wailing. Another patrol car swooped around the first and cut me off in front and an officer on a bicycle pedaled up.

I was trapped, but why? Could I, in all my professorial finery, fit the description of a local mugger? I calmly prepared to straighten out what was surely a case of mistaken identity while the neighborhood kids looked on in amazement.

The officers leaped from their cars and shouted at me to get off the bike and put down the briefcase. They frisked me and poked in my briefcase, then demanded identification.

They were incredulous when I explained that I had none because I didn't carry my wallet between home ("Right over there," I pointed) and work ("Right back there"). The best I could do was a business card.

I was then told that I was riding a stolen bicycle that they'd been staking out all afternoon. The bike in question is old, dirty and semi-functional and I've had it for years. I couldn't believe the accusation, much less the need for the big bust.

Could I prove it was mine? Well, no. Any receipt I'd had was long gone and the bike had never seemed worth licensing.

The officers then read me my rights as I stood there dumbfounded. When they asked me if I had anything to say (were they expecting a confession?), I said "No," somewhat belligerently.

Fixing an I-know-you're-guilty look on me, the sergeant said, "Well, we won't run you in on this one, but we'll have to impound the bike until our detective can investigate the case. You can go now."

As I dejectedly walked the last block home, I saw the neighbors were at their doors and windows watching.

My feelings ranged from anger and embarrassment to the sort of vague guilt that Kafka's Joseph K. felt, though unlike K., I knew what I was accused of and therefore felt more righteously innocent.

I considered contacting an attorney, but attorney's fees would cost more than the bike was worth. Maybe it would be best to forget the whole thing. Still, I didn't want a record of bicycle theft.

So I called an attorney who is a friend (and who charged nothing for the phone calls involved). She learned that the police had a suspiciously detailed description of my bike, though the complainant had no other proof of ownership. We considered the possibility that I was being harassed.

The police conceded that if friends or neighbors could identify the bike as mine, I could have it back. Unfortunately, the bike is so nondescript that the friends I asked could barely remember it. They doubted that they could pick the bike out of a line-up without me on it. I got nervous.

The campus "detective" went to my neighbors with an array of Polaroid snapshots of bikes, and to my surprise and relief they were able to identify the bicycle in question as mine.

I was allowed to go to campus police headquarters and reclaim my by-then flat-tired bike, which I somewhat resentfully did. This did not seem adequate vindication for the frustration, anger, embarrassment and inconvenience I had suffered.

But I was reminded of how much more difficult it is for people who are not confident, middle-class professors with friends who are lawyers to deal with their legal difficulties.

I was also reminded that police-community relations have been an issue in this and other cities for years, and I resented the aggressive, overkill attitudes of the campus police. If any unit of law enforcement should be community oriented, it is the campus police. They are responsible for only a small area with a stronger sense of community than most.

Instead of staking out the bike, following me for blocks, stopping me at my doorstep and treating me as if I were a rapist, they could have asked me a few questions as I unlocked the bicycle. Three officers, flashing lights, frisking, the reading of rights and impoundment seem

excessive. Some of my neighbors also felt there were higher priorities in law enforcement than bike theft.

I know the officers were fresh out of training and wanted to apply what they'd learned. I also know there are dangerous characters in my neighborhood, though I doubt that I look like one.

But campus cops aren't city police, and bicycle theft isn't homicide. Campus police, like police anywhere, need to perceive more clearly who they are, what their role is, and the community they are dealing with.

CCC Student Essay Number 3 - Marginal Pass

The main point that Terry Christensen is trying to convey is the injustice suffered by people because of the aggressive, overkill attitudes of the campus police. I agree with Terry because I have been faced with a similar situation and therefore can sympathsize with his dilema.

I was driving to my home from work one evening when suddenly I was forced to the side of the road by three police cars. One car pulled directly in front of me. The others were to my side and rear. The situation had taken me completely by surprise. It was very dark outside. My window was partialiy open. As I reached for my drivers license I was grabed on the arm by an officer. He proceeded to open my car door, pull me out of the car and then place me face-down on the pavement. During this brief period I kept wondering what it was that I could possibly have done.

The police handcuffed me and informed me that I was under arrest for suspicion of armed robbery and assault with a deadly weapon. I told them that I had just left work and was on my way home. Apparently

a robbery had just been committed in the area and my car vaugely fit the description of the vehicle involved.

A few moments after being placed in the police car a message came over the radio that the actual perpetuator had been apprehended. The officers then apologized for any inconvenience that they may have caused me and told me that I was free to go.

I was terribly upset. It seemed to me that the officers involved could have handled the matter in an entirely different way. I made no sudden movements to warrant the type of aggressive tactics they used on me. It seems that in this day and age there is a tendency for many police officers to act now and think later. I would like to see that tendency reversed.

Comments

This student demonstrates understanding of Christensen's point and sets forth the issue in a strong opening sentence. Although the student presents an appropriate, detailed anecdote to elaborate his views, the narrative is too imitative of the original essay and does not lead to analytic or reflective statements about aspects of either Christensen's or the student writer's experience. Only in the last sentence does the student return to a general point. Although sentences are clear, the writing style is too simple, lacking variety and sophistication in diction and syntax. Relatively error-free, the paper does reflect weaknesses in spelling and punctuation. Occasionally the writing is marred by cliches ("taken...by surprise," "this day and age").

CCC Student Essay Number 4 - Clear Fail

The main point which Terry Christensen is trying to get across is the fact that the campus police over-due the job intended for them. They go over the limits assigned to them just so they can look good in front of superiors and others in the community. I feel Terry's point is a very strong point which has caused alot of controversy through out the years. It brings up the question of, "Do the campus cops, and other cops have the right to hurt and offend people the way they do without right jurisdiction." I agree very much with Terry's point because cops alot of times do over act, and mainly so they can gain some sort of merit from higher authority. I can't understand how the campus cops could make such a misleading mistake with an innocent person. Obviously they didn't research the case long enough; they probably went looking for a bike that best fit the description, found it, and discontinued the research. Leaving an innocent person guilty of a crime because the cops ended the search, without taking it up to the fullest extent. My friend was once involved in the same sort of situation, where an innocent person was pinned to a criminal act which she didn't perform. She was driving down the road, saw a street sign which had fallen, and pulled over to look at it. As she picked it up, a cop came skidding around the corner with his lights flashing. She was fined for stealing the sign, when she had only picked it up. Her sentence in court was $1000 or 6 months in jail. She was fortunate enough to have a defendant in her favor, who had helped her out with this sentence, and had it largely reduced. But you hear of cases like these all the time. I think the

cops really feel somewhat macho or something if the can arrest someone. Another case, is what is happening in the DeAnza parking lots, the campus cops are out there just so they can spring on someone who is illegally parked. My friend hurt her ankle, so being in an emergency position, I parked in the handicap parking, so she wouldn't have to endure more pain than needed. Right after we got out of the car, I was ticketed by a campus cop. I explained to him the situation which I was dealing with, but he didn't listen to a word I said. But because my own personal experience, I feel cops in general over-due the limits put onto them. They carry things way out of proportion and try to fulfill other jobs no designated to them. Therefore I feel Terry shpuld have gone another step, just for his rights as an innocent citizen.

Comments

This writer lacks control over the material. At the outset, the writer presents a series of unsubstantiated generalizations related to Christensen's article. At the end of the paper, some interesting appropriate anecdotes are offered, but they are not clearly connected to general points and do not reflect a sense of organization. Sentence structure and diction problems are frequent ("a misleading mistake;" "an innocent person...pinned...to a criminal act;" "being in an emergency position"). A number of mechanical problems appear--sentence fragments ("Leaving an innocent person guilty..."); spelling errors; faulty reference ("a cop came skidding around the corner with his lights flashing"); comma splices and other punctuation errors. The major faults of the paper, however, are its lack of direction, its lack of coherance.

CCC Examination Number 3

Read the topics below carefully and write an expository essay on one of them. Papers which are basically narrative (stories) or are written in excessively simple, "primer-style" prose will be unacceptable. Organize your ideas logically and support your generalizations with specifics. It is recommended that you spend about 10 minutes choosing a topic and organizing your response. You may use a dictionary if you wish. Allow yourself time to proofread for mechanical errors. The quality of your essay is much more important than the length.

Topics: A. Following the example set by Harvard and Yale, the University of California at Berkeley has established that "the 1980's should be the period in which transition to universal 'computer literacy' for undergraduates is completed." According to George Maslach, Vice Chancellor for Research at Berkeley, the goal of computer literacy is important. "Computer science education now ranks with simple arithmetic or literacy in the English language. A liberal education today requires computer literacy." Computer literacy is defined as being able to define a problem, devise a method for solving it, translate that method into a "program," test the program, and operate it. Argue for or against Maslach's belief that computer science education is asimportant as competence in arithmetic and English.

B. George Kennan, former Ambassador to Russia, recently wrote: "I believe that until we consent to recognize that the nuclear weapons we hold in our own hands are as much a danger as those that repose in the hands of our supposed adversaries there will be no escape from the confusions and dilemmas to which such weapons have now brought us. . . ." There is no solution, he continued, "other than the complete elimination of these and all other weapons of mass destruction from national arsenals . . . . The greater courage we show in doing so, the safer we will be." How much validity do you think this statement carries in the light of specific historical events, past and current?

C. In the last five years, thousands of refugees, such as the Cubans and the "Boat People" from Southeast Asia and Haiti, have sought refugee and immigrant status in the United States. That these refugees may now face a less than enthusiastic welcome in this country is suggested by a recent cartoon in the San Francisco Chronicle which shows a boatload of refugees looking at puffs of smoke coming from the Statue of Liberty; one of their number exclaims, "The smoke says, 'Go back. We have guns.'"

Some people say that we have an obligation to accept these refugees; others say that they should be turned away or even returned to their countries of origin. Do you think that the U.S. Government should accept these refugees? If so, what can and should the United States offer them? If not, why not?

D. A recent book review in the San Francisco Chronicle included the following commentary on women in the military.

The military is by long custom a world designed by men, for men, whose penetration by women is by most resented and resisted. That this resentment does not quite defeat "integration" results from the military also being hierarchical and authoritarian and compliant with civilian policy. Duty matters, and even when the duty is odious it will nonetheless be assumed in good faith.

The primary barriers to success for women are biological and psychological, including attitudes about physical capacity and the appropriate roles of men and women in a civilized society. In effect Representative McDonald (D-Ga) has argued publicly that "a woman's place is not on the battlefield." There is also recognition that the physical training routines central to the military must be modified. If they are modified, that becomes a source of resentment among men; if they are not modified, that assures that many women will fail at the old physical tests.

Taking into account the unique character of the military, suggest a plan by which these barriers against women can be reduced.

E. Recently the mother of a seven-year-old girl sued to compel a prestigious father to visit his illegitimate daughter. The United States Supreme Court ruled in this case that, although a parent has the right to visit a child in custody of another parent, the child has no corresponding right. In other words, the Court indicated that if a parent chooses to avoid personal contact with his child, it is his prerogative, that non-monetary parental obligations constitute "moral rather than legal duties."

Write an essay in which you justify the Court's decision OR write an essay in which you argue for the child's right to visit the parent.

CCC Student Essay Number 5 - Marginal Fail

The Danger of Nuclear Weapons

George Kennans statement about the complete elimination of nuclear weapons and all other weapons of mass destruction, is one that I completely agree with. The validity of this statement in light of specific historical events past and current stands up for a number of reasons.

CCC #5
Marginal Fail

The United States and the Soviet Union have been stockpilling nuclear weapons for the past thirty years in an alarming degree. These weapons that have accumilated over the years can destroy the Earth many times over. Comparing this to historical events you find out that when countries have built powerfull weapons and armies they have used them to conquer others.

Another reason is man has always made mistakes, and a single mistake by a human in charge of these weapons can lead to the destruction of the Earth. As in the past case with Hitlers Germany.

There are those who say that having these weapons deters war, but I do not agree with this. Having these weapons gives one side a chance of victory which makes war more likely.

Comments

Although this student comprehends the topic and demonstrates simple organizational competence (and even offers a counter-argument), this essay fails because it lacks content and development. In the thesis statement, the student promises "specific historical events past and current," but these historical examples--essential to clarify and support each reason--are not given. The sole allusion to Hitler neither clarifies nor supports the point it follows.

This essay is also seriously flawed by numerous errors in sentence structure ("As in the past case with Hitler's Germany," is the most obvious), vague, unclear wording ("Comparing this to historical events..." or "The validity... stands up for a number of reasons), and grammar/mechanics ("George Kennan's statement about the complete elimination of nuclear weapons and all of the weapons of mass destruction, is one that I completely agree with").

This student will benefit from remedial work preparatory to English 1A.

THE CALIFORNIA STATE UNIVERSITY

The English Placement Test (EPT) is required of all entering California State University students who enroll with fewer than 56 transferable semester units. Only two groups of students are exempt: those who have completed an acceptable college course in English Composition of four quarter units or three semester units with a grade of "C" or better and those who have received satisfactory scores on the following examinations:

- Satisfactory scores on the California State University English Equivalency Examination, a voluntary program offering advanced credit for those who pass;
- Scores of 3, 4, or 5 on the English Composition Examination of the College Board Advanced Placement Program;
- A score of 600 or above on the College Board English Composition Test (ECT);
- A score of 510 or above on the verbal section of the College Board Scholastic Aptitude Test (SAT-Verbal);
- A score of 23 or above on the American College Test (ACT) English Usage Test.

The EPT is offered only to admitted students and has no effect upon admission decisions.

Consisting of both objective questions and essay topics, the EPT measures four skills: reading, sentence construction, logic and organization, and essay writing. Sample test questions for all four parts can be found in the California State University publication, English Tests.

The following essay topic is an example of a recently administered examination. Readers who score student essays are given rating guidelines and cautioned to take into consideration the imposed time limit so that students are not unduly penalized. Composition weaknesses may appear that more pre-writing activity and editing time might eliminate. Very few papers are flawless, but the better papers address the topic clearly and fully, with sufficient development and evidence of sentence handling skills.

California State University (CSU) Examination Number 1

Topic: You will have 45 minutes to plan and write the essay assigned below. Before you begin writing, consider the topic carefully and plan what you will say. Your essay should be as well organized and as carefully written as you can make it. Be sure to use specific examples to support your ideas.

Relate an incident in which you were disappointed because of your own action or failure to take appropriate action. Perhaps, for example, you could have saved someone else from embarrassment by speaking or acting in some way, but did not; maybe you could have prevented an unfortunate incident from occurring, or could have seen that someone received well-deserved recognition, but did not act or speak up.

In your essay, tell what happened; indicate what you did or failed to do; and explain what you learned from the experience.

CSU Student Essay Number 1 - Clear Pass

For several summers now, I have found employment as a river guide on white-water rivers in California and Oregon. Although I now feel quite confident of my rowing skills, and comfortable with my role as a guide, this was certainly not always the case. I can still remember all too clearly my third day of training: Michelle behind the oars, and a boat wrapped around a rock for over six hours!

It happened on a calm, clear afternoon. There were five of us in the boat: an instructor and four students, of whom I was one. We had been given a long day's work-out; we had begun early in the morning and practiced hard manuveurs and skills for eight hours or more. It was

nearing the end of our time on the river, and Sparky (the instructor) suggested I take over. I refused the offer, but he persisted, and I lazily climbed onto the rowing seat and took the oars.

We were on a rather calm stretch of river at the time, and to date I will NEVER let this serve as an indication that one can be lapse. We came upon a stretch of white water, with a clear and unobstructed channel clearly open to take a boat through. To the left and right of this channel were rock formations: pretty to look at while passing by, yet NOT something you would want to tangle with! Well, to put it as simply as possible (and as the reader will probably have already guessed by the few hints already dropped!), I missed the clean, easy chute, and suddenly we found ourselves swept onto a rather imposing group of rocks.

When your boat is perched high and dry up on some rocks, the best thing one can do is to contemplate one's situation and figure out a solution. That is what the five passengers of this boat were in the midst of doing, when suddenly, with a great surge, a rush of river water poured over one of the sides of the raft. Within seconds, the boat we had just been sitting in was sucked underwater and pinned against the rocks we had all jumped to as soon as we realized what was happening.

It was evident now that someone needed to take control of the situation and start issuing some valid commands. And it is here that my disappointment in my actions, or more clearly, lack thereof, come into focus. As pilot of the raft that I had just wrapped against a rock, it should have been I who took charge of the situation. Yet, all I could feel was how scared I was, and how I wished I were anywhere else in the

world, and how guilty I felt for the situation I had just gotten us all into. Luckily for me, we had an instructor with us who was very skilled in his river-running profession, and he immediately took charge.

The first thing we all needed to do was untie as much of the gear from the load as possible. This was no simple task, considering that three/fourths of the boat was under a rushing current of water. We managed to get most everything undone, and then we had another boat, which had waited for us at the bottom of the rapid, pick up the items we sent floating on their way. Lastly, we floated down, where we were picked up in much the same fashion as the gear had been.

The next step was saving the boat. We attached a rope from it, and sent the rope to shore. And there, with twenty-five people pulling as hard as they could to get the boat off the rock it was pinned to...nothing happened. We tried a two-pulley system; a three-pulley system...and still the boat did not budge. Five hours later the floor of the boat finally gave out, and the boat quietly floated downstream, where we awaited it.

So where does my learning experience from a situation where I was extremely disappointed in myself tie into all this? Perhaps so far, this all just sounds like an exciting true-to-life adventure story! Needless to say, one of the first thoughts I had, when I was calm enough to think rationally again was how incredibly determined I now was to learn some skills as quickly as possible, to avoid anything remotely resembling this again! But in addition to that though, there was a lot of other valuable learning experience which occurred.

Ego-shattering is a devastating experience, and one which a person

can learn much from. It took me many, many days to get my self-esteem (which is normally almost too high!) out of the pit it had been buried in. I'm always the first to be sympathetic when someone has experienced a difficult situation, and yet, it was here that I learned about being on the receiving end of that sympathy. Tis easier to give than to get was part of my lesson there! Yet, I feel it has helped me understand much better how people that I counsel are feeling, in a way nothing else could have. I guess I can call it a good lesson in humility.

I also learned a few lessons in assertiveness. When Sparky had first suggested that I take over, and I had known how tired I was, I should have reacted a little more strongly in asserting that I did not feel confident to row in that state. By easily relenting, I put us into a situation far more dangerous!

Comments

This essay fits the scoring guide criteria for a paper rated a clear pass, permitting the student to enter a regular freshman composition class with considerable confidence.

Consider what this student does well. There is a clear focus on the incident, an awareness of the writer's role ("as the reader will probably have guessed"), and full coverage of all parts of the question. The narrative is detailed but does not overwhelm the explanation of what the student failed to do, nor does it lead to a slighting of analysis of what the student learned from the experience. The last three paragraphs show an attempt to analyze beyond surface-level cliches.

Although the dramatic emphasis borders on the exaggerated at points, the student shows fluency and clear sentence-handling skills, with some effective word choice ("Five hours later the floor of the boat finally gave out, and the boat quietly floated downstream, where we awaited it.") Again, given the time restriction, the student provides evidence of paragraphing and transitional skills in moving us through the incident, the consequences of action or inaction, to the introspective analysis.

"It happened on a calm, clear afternoon."
"We were on a rather calm stretch of river at the time..."
"It was evident now that someone needed to take control..."
"So where does my learning experience..."

The paper is, of course, not flawless--some idiom weaknesses ("confident of") or slights of sound substitutions ("lapse" for lax), and lazy constructions ("there was a lot of other valuable learning experience which occurred."). But in overall impression, the paper warranted a clear pass.

CSU Student Essay Number 2 - Clear Fail

The incident, in which I was disappointed at my own action for not reacting, took place at my job.

There are three girls, including myself, who work in a office. One of the girls, Joan, is dating my supervisor's brother. This girl wanted to gain all of Jeri's, my supervisor, attention and friendship. She would do anything for Jeri.

Jeri began to notice what she was doing and backed away from the situation. Joan noticed this and she began to gossip bad things about Jeri, give her dirty looks, and treat Jeri's mom & dad and other family members badly.

The way that I had failed in this situation was by letting the gossip go on to long. By not approaching Jeri with the problem. Jeri, several times, asked me what was the matter with Joan and why was she acting this way. I didn't tell Jeri because I didn't want Joan to think that I was not a trust worthy person because she told me the whole situation and asked me not to tell anyone.

The whole incident got very out of hand. Joans attitude towards everyone became harsh. Jeri developed stomach problems, she said her family life was being ruined by the things that Joan did and said. There would be days when either of them would talk to each other, or to anyone else. If I had approached Jeri and told her what was being said and why, it wouldn't have gone on so long.

The thing that I learned from this incident was to not to be afraid to tell someone that somethings going on and I feel that they should know about it. Also to trust that person in knowning that my opening up

with them and explaining will be held in confidence between the two of us.

Those were the reasons why I held back, and if I respected Jeri more, as I do now, I could have stopped the incident by my action of getting involved.

Comments

This is clearly a failing paper. Although it shows understanding of the writing tasks involved and does provide coverage of all three parts, the narration is confused and lacks detail. More important, the paper shows obvious difficulties with sentence construction: fragments ("By not approaching Jeri with the problem.") and run-on/comma-splice problems ("Jeri developed stomach problems, she said her family life was being ruined by the things that Joan said and did."). These indications of sentence-handling problems by themselves would justify placement of the student in a remedial-development program prior to her enrollment in the regular freshman composition course. The student also displays some uncertainty about other conventions--the missing apostrophes in possessives or contractions ("Joans attitude?"somethings going on") and misspellings, as well as other signs of weak editing skills ("There would be days when either of them would..." or "to long"/"knowning").

These sentence-handling weaknesses would make it very difficult for the student to function effectively in the regular composition class, but the overall impression is also that of a student who does not know yet how to generate ideas, who lacks confidence in the importance of what she knows and might want to write, and who consequently writes hastily without regard to even surface-level proofreading.

CSU Student Essay Number 3 - Marginal Pass

In 1977 I could have prevented an almost fatal sky diving accident. Several associates and myself attended training at the airport in Seneca Falls, New York, for our first attempt in jumping from a plane. Our instruction consisted of a four hour work shop explaining skydiving techniques and appropriate action to be taken in case of equipment malfunction.

As novices in a dangerous and highly dramatic sport we took our instructor's word as a supreme dictate. Every time he said "It could only take a few seconds reaction time to complete a task," we listened more intently. Questioning his authority was not in our game plan.

After "gearing up" with our parachutes on our backs we ascended to 2,800 ft for our first jump. Static lines were secured to our chutes to open them automatically upon leaving the plane. This was a safety device instituted in all airports for first jumpers.

The first man, Jim, was shifted to the door of the plane and asked if ready to go. The static line that belonged to Jim's parachute did not appear to be attached. I slapped the jumpmaster on the arm and shouted above the plane noise not to let him jump and pointed to his static line. The lines were disorderly with several in the same area. The jumpmaster indicated it was alright, but I knew he wasn't looking at the same line that I was. I felt embarrassed and he said I was a nervous amateur and everything would be alright when I calmed down. The subject was dropped.

A few seconds later on Jim's dive out the door no static line snapped tight to jerk his chute open. The entire plane was in a panic

CSU 83
Marginal Pass

including the "stable" jumpmaster. Jim kept falling and I began feeling sick knowing his chute would not open. Luckily our instruction did pay off. His main chute was discarded and we soon caught a glimpse of his reserve.

The episode ended with no injury. I learned no matter how stupid I feel or am made to feel, to keep on the issue if you are positive of the facts. Anyone can make mistakes even proffesionals.

Comments

Paper number 3 earned a marginal pass. Readers noted the disproportionate narration of the incident, with limited analysis of what the student learned from the experience--and that analysis in rather tangled sentence construction ("I learned no matter how stupid I feel or am made to feel; to keep on the issue if you are positive of the facts."). To remark on the misuse of the semicolon would mislead the student if one were aiding in revision. More than punctuation is faulty in the unassimilated sentence hastily written to close the paper.

But the student does, earlier in the paper, show basic writing competence in setting a clear focus on the incident in paragraph one ("Our instruction consisted of a four hour workshop explaining skydiving techniques and appropriate action to take in care of equipment malfunction."). Although we longed for punctuation, notably hyphens in word constructs such as four-hour, we also noted his ability to compress for emphasis ("Questioning his authority was not in our game plan."). And despite the hastily-provided conclusion, the student does show a clear pattern of organization to cover the tasks indicated in the assignment.

The mechanical errors seemed minor, given limited editing time, with the elegant error perhaps unnoticed these days ("Several associates and myself' rather than I) or the lazy "everything was alright" or misspelling of embarrassed. Overall, the paper fit the marginal pass classification.

CSU Student Essay Number 4 - Marginal Pass

Last Wednesday afternoon, I received my grade report from my school. The result was much much better than I expected. I was really relieved because this had been troubling me for quite a few weeks. For this reason, I did not go anywhere. I decided now to go to my friend's arcade on the next afternoon to play my favorite T.V. game, 'pac man'.

On Thursday afternoon, I went there by myself. It was a quiet afternoon for the whole shopping plaza. I parked my car by the side of a tree so that the shade could help keeping my car cool. However, it was not too far away from the arcade, only about a hundred yards away. Suddenly, I heard the alarm blowing and I saw three young kids rush out from my friend's arcade. I was startled but I did not make any move. I stayed in my car. I could recognize what they wore and the brand and color of their car. I did not dare to get out of my car and stopped them. I was afraid that they might recognize me and I saw them drive away. I stayed in my car for quite a while until the police came. However, when I saw the police, I failed to tell them what I saw. I started my car and drove back home.

I felt so secure and safe when I reached home but I did not feel any comfort at all. I tried to forget what I had seen and turned on the radio. However, I was not listening at all. Then, I tried to get something else to do but I could not concentrate on it. Finally, I knew what was wrong with me. I was hiding something that I should not. I decided to call my friend telling him that I saw the guys and I recognized their car.

Then I called my friend. The officers were still in the arcade and

they told me to come over to the arcade and gave my statement. I went to the arcade and saw that several machines were broken. I asked my friend how much did he lose. He said that he did not have much money in the cashier and he lost only about fifty dollars. I was so glad that he did not lose big money.

I felt sorry for what I had done because I was so afraid that the gangsters might recognize me. It was really selfish for myself not even helping my friend. I learned that it is important to help somebody when you could and also be honest to yourself. I hope I will be more courageous after this incident.

Comments

This paper received a marginal pass, but language interference problems show that this ESL student has not achieved full control of English syntax. The student does attempt to address all parts of the question, but the structuring of the response shows weaknesses in selection of detail. The introductory paragraph, for instance, does not clearly frame the topic nor does it indicate the relationship between performance at school and the reward of relaxation the student wanted to provide through his visit to his friend's arcade.

The weaknesses show also in the limited sentence subordination skills, evidenced by the number of sentences throughout the paper which have single clause or compounded clause patterns (e.g. in paragraph two: "I parked," "I heard," "I stayed") and the idiomatic problems ("I did not dare to get out of my car and stopped them," "selfish for myself," "but I did not feel any comfort at all"). The mixture of strengths and weaknesses would seem to signal the need for further acculturation (vocabulary and sentence-combining skills) rather than remediation.

CSU #5
Marginal Fail

CSU Student Essay Number 5 - Marginal Fail

The sign was, mounted with much effort, however, crookedly pasted on the front wall, it read, "Welcome to the annual Star Lite Dance." The Star-Lite Dance for mentally retarded was a dance given by the "S" Club at Chula Vista High School. It was a required function, therefore, many of the girls went with negative attitudes; encluding me. I knew it was wrong to act in such a way, to make judgements before giving these people a chance to prove themselves worthy of being normal; but I still felt uncomfortable with the situation. I walked into the room and glancing from side to side, I noticed, the room split in half. In one corner were my friends and the other were the retarded people. As I stood, a man in a wheel chair approached me with the warmest, sweetest smile, a smile that wasn't evident in anyone of my friends. I heard a faint yell through the music. It was one of my friends calling me over to join them. I was awed with the situation, whether to join the group I so wanted to get to know and be a part of for the night, or join my friends for the sake of being thought of as one of them, and maintaining my popularity. I decided my friends and popularity were more important.

I failed to follow my own personal judgement but to place myself in the situation of being "one of them."

Comments

This paper is an example of a marginal fail. This ESL student provides some promising indications of an interesting voice, shown, for example, in the selection of detail (the sign "crookedly pasted," "a smile that wasn't evident in anyone of my friends"). However, the proportioning of the response shows the weaknesses in structure and development: one long paragraph of narrative/analysis and a very short resolution paragraph of one sentence.

Moreover, the student displays some serious sentence-handling problems with the comma ("The sign, was" or "I noticed, the room split in half), and with the semicolon ("It was a required function, therefore, many of the girls went with negative attitudes; including me.") Such a student could rather quickly realize her potential given remediation which emphasized organization and sentence-handling techniques.

UNIVERSITY OF CALIFORNIA

Freshmen entering the University of California are expected to be able to write coherent, substantive, and well-organized essays, relatively free from gross errors in grammar, spelling, and punctuation. Acceptable expository writing skills can be indicated by freshmen in one of the following ways:

1. By a test score of three or higher on the Advanced Placement English Test;

2. By a score of 600 or higher on the College Board English Composition Test (ECT);

3. By a "pass" on a diagnostic essay examination administered by a particular campus's Subject A department (most campuses, but not all, prepare special placement examinations referred to as the Subject A Essay Exam; "Subject A" refers to those courses or parts of courses which enable students who have not qualified through one of these three measures to meet the University's writing competency requirement);

4. By a grade of "C" or better in a freshman-level composition course at a previous institution.

On most campuses, a student who scores below 600 on the ECT but above a minimum score established at individual campuses of the University will take a Subject A exam to determine his or her writing competency and subsequent placement either in a regular freshman composition course or in a course that meets the Subject A requirement at the campus where the student is enrolling. A student who scores below the minimum ECT score established at each campus must enroll in a course that meets the Subject A requirement for that campus.

If a special Subject A exam is given on a campus, it is administered prior to registration for the fall term or during the student's first term in residence. Students taking this exam on any campus where it is given will be asked to write on one or more prescribed topics within specified time periods. Since examination schedules, formats, and topics may vary at the campuses, and since not all campuses administer Subject A placement examinations, students are advised to contact directly someone in the Subject A department on an individual campus for more detailed information.

Typically, however, Subject A essay examinations are based upon a brief reading passage, or prompt, introducing a subject of general interest or concern. The question derived from the prompt will have no "correct" answer, its intent being merely to suggest a focused approach for student essay responses.

The essays are scored holistically, readers weighing the "total effect" of an essay's form and content before arriving at a general evaluation. A passing essay will demonstrate the writer's ability to write reasonably well-organized and developed expository prose with minimal departures from the conventions of standard written English. Thus, a mechanically correct but empty essay is as likely to be judged unsatisfactory as a substantive but poorly written one.

The following sample Subject A examination is typical of those administered on most campuses.

University of California (UC) Examination Number 1

You will have 90 minutes to respond to ONE of the following topics in a carefully thought out, clearly written essay. Read through both topics, and take your time deciding which one you will write on. Don't begin writing until you have given your topic some thought. Essays that are primarily narratives or that do not respond to the question will be rejected. Your essay will be judged on its organization, the development of its argument, and the quality of its sentences.

1. In a recent newspaper article, one writer reflected about the current debate on gun-related crimes by observing:

> 47% of all households in the United States are reported to have guns, an estimated total of nearly 34,000,000 pistols and rifles. Many Americans believe that the easy availability of guns is a major factor in our current high crime rate. Many others believe that they have an historical and inalienable right to own guns for self-protection and pleasure.

Argue for or against the right to own handguns. Be specific.

OR

2. There is a tyranny in California, a tyranny to be 'laid back' whether one wants to be or not. The pressure to sail, jog, have straight white teeth and a tan, to be free from nervous disorders and hurry, to be well-adjusted, easy going and funloving...is everywhere.

Does this assessment fairly portray life in California as you know it? Support your position with examples from your own observations and experience.

The next two examinations, with sample student responses, suggest the range and variety of Subject A examinations at the various campuses. The first topic is atypical because its reading passage is longer than those in most Subject A examinations.

UC Examination Number 2

Topic: The following passage is a psychological case history. Its subject, Angelo Cacci, suffers from depression (a painful emotional reaction characterized by feelings of loss, worthlessness, or failure--feelings not explained by an objective view of immediately surrounding events).

Read the passage and the topic carefully; then write an essay of 500 to 700 words. You will have two and a half hours to complete your essay, probably enough time to allow you to write a draft, revise it, and copy it over. You may find it helpful to mark the passage, to jot notes, or to make a brief outline before you begin to write. You should be sure to support your points by discussing specific examples from the case history. As you write your final draft, you should strive for as coherent and well developed an essay as you can produce in a relatively limited time. Before handing in your essay, you should also double-check your grammar, punctuation, and spelling (a dictionary is available).

The topic has no "correct" responses and requires no specialized knowledge. It is designed to give you the opportunity to show that you can do the kind of writing usually demanded in university papers and exams. Your readers will be interested in how well your essay shows that you can handle academic writing, as well as in whether your command of Standard English allows a reader to focus without distraction on your meaning.

Reading Passage:

A young man visited a New York counseling center because he was feeling "very down in the dumps." Angelo Cacci was 32 years old, lived alone, and was employed as a clerk in a large insurance company. The counselor noted that Angelo was neat, clean-shaven, and fairly good looking. He dressed nicely, though not expensively. He spoke clearly but without flair; this lack of emphasis in speech could have been related to his depression. He seemed willing to discuss his history and his feelings.

Angelo stated that he had had passing periods of "the blues" before, but that his present feelings of depression were more severe. Several months earlier, Angelo had broken up with his girl friend. "It just wasn't working out," he explained. "We used to go out--to the park, a ball game, the movies--but after awhile it fizzled. I just didn't feel that much for her anymore." He added that a similar feeling caused him to end a relationship with another woman five years before.

Angelo talked a great deal about his past. He comes from a working

class family of Italian extraction. When Angelo was younger, the Cacci family lived in a predominantly Italian neighborhood. Angelo now lives in a high rise apartment building occupied by single people, most of them about his age but from varied backgrounds. He has a brother and a sister but doesn't see either one. His brother was transferred to a Chicago office, and his sister moved to California after her marriage.

All four of Angelo's grandparents died when he was quite young. Still, some of Angelo's fondest memories involve his paternal grandfather. The old man used to take him fishing outside the city. Angelo's father, on the other hand, didn't have much time for his children. Mr. Cacci supported the family as a dockworker, but he left when Angelo was 11. After the desertion, Mrs. Cacci got a job in a clock factory, and she has worked there ever since.

Angelo described his childhood as very unhappy. His father was seldom home; when he was home, he was constantly fighting with Mrs. Cacci. After an argument, Mrs. Cacci refused to speak to her husband and also withdrew from her children. Angelo remembered that as a child he was often puzzled because it seemed that his mother was angry with him, too. Mrs. Cacci sometimes told her children she had ruined her life by marrying a "truckdriver." After Mr. Cacci left, Angelo added, his mother seldom smiled or laughed or conversed much with the children. When she came home from work she usually put on her robe, cooked dinner, and spent the evening watching television. This pattern continued well into Angelo's young adulthood.

After high school, Angelo went into the army. There he developed good typing, clerical, and accounting skills. He described the army as being "uneventful." He put in his time and was honorably discharged.

Angelo's present job involves checking customer damage claims resulting from automobile accidents against insurance investigator reports. His work provides the company with the evidence it needs to challenge exaggerated or fraudulent claims. Angelo estimated that he processes 20 to 25 claims per day. The counselor noted that Angelo's work record must be a good one, for he has been with the company for ten years and regularly gets the raises given employees in good standing. Asked how he liked his job, Angelo replied, "It's OK. It pays the bills and leaves me a decent amount for entertainment."

The reason for Angelo's visit to the counseling center, his depression, puzzled him. "Sure I broke up with my girl," he said, "but I wasn't in love with her. Besides, I've been through that before." His job, he continued, was "all right." As for his family, he said, "I go to see my mother now and then. She's as gloomy as always, but I realize there's not much I can do about it. She's been that way for a long time."

Topic:

Sociologists use the term anomie to designate the rootless, disoriented

feeling that people have when they are cut off--or feel cut off--from the society they live in. Anomie, also called alienation, suggests a lack of real commitment to work, family, friends, or societal values. Analyze Angelo's depression as an example of anomie.

UC Student Essay Number 1 - Clear Pass

From the evidence obtained from the passage, it can be deduced that Angelo Cacci suffers from a case of anomie, the rootless, disoriented feeling that people have when they are cut off or feel cut off from their society. Angelo has no real commitment to his work, although he has been a dependable employee for ten years. He does not speak of having close friends or lovers, he feels no close ties to his family, and he doesn't seem to have any strong feelings for societal values. This lack of feeling for the world around him has caused him to become depressed. Because of the absence of a single factor causing this depression, such as the breakup with a girl friend, Angelo cannot pinpoint the cause of his problem and he must search for outside help.

Angelo does not seem to gain anything from his work--he describes it as being "all right"--yet he has been at the same job for ten years. He has no goals such as rising on the company ladder or changing to a more challenging career. It can be deduced that he stays at his job only because of the security and the knowledge of regular pay increases. Perhaps it was the lack of a regular flow of income in his childhood home that caused him to seek a secure position with no commitment involved.

Although Angelo mentions two girlfriends in his life, he says nothing of feeling strong emotions, positive or negative, towards either one. He says of his most recent girl friend that he "just didn't feel

that much for her." Perhaps the lack of love between his parents has been a factor in causing Angelo to avoid commitment with women. He doesn't mention any significant friendships outside of love affairs either, so he has no commitments to close friends. Even his place of residence suggests an atmosphere of rootlessness, as many high rise apartment buildings of single people from varied backgrounds cause people to turn to themselves rather than to others.

Because Angelo talks quite a bit about his childhood rather than the present, perhaps he feels that the present has no meaning and his past is the only thing influencing his life. He describes his childhood as "very unhappy." Angelo's fondest memories are of his grandfather, who died when Angelo was quite young. Angelo's father had no part in his life, and he deserted the family when Angelo was eleven. Thus, the only person Angelo felt anything for died and, because his father left and his mother was constantly angry or depressed, he felt no love or commitment to either parent. He must not have been close to his brother or sister either, for he doesn't make an effort to see them now. Therefore, Angelo has no ties or commitment towards his family.

Angelo does not mention any personal feelings towards societal values. He appears to be alienated from such emotions as love and hate. This is evident in his statement about his mother, "She's as gloomy as always, but I realize there's not much I can do about it." He doesn't feel a need to help his mother, and even if he did, he would feel powerless to do anything.

UC #1
Clear Pass

From the passage about Angelo Cacci, it can be concluded that his depression stems primarily from "anomie" or alienation. His lack of commitment to the important aspects of life such as work, friends, family, and societal values caused him to feel rootless and disoriented, and has ultimately led to his feelings of depression.

Comments

This essay is a clear pass. Its introduction defines anomie and shows the concept's relation to Angelo; the rest of the essay treats all the topics suggested by the definition--work, personal relationships, family, and values--without becoming a mechanical checklist. The essay uses all the relevant data from the case history to support its points, and it skillfully introduces significant and carefully edited quotations ("all right," paragraph two; "he just didn't feel that much for her," paragraph three). The first paragraph exemplifies the essay's control of sentence structure and style. Its second and fifth sentences use subordination with "although" and "because of" to highlight meaning; sentence three uses parallel structure to present three related assertions in balanced and elegant form. Sentence five also includes the vivid, specific verb "pinpoints." The whole of this essay shows a writer who commands both form and content.

In spite of its obvious strengths, this essay is not flawless. For example, the writer uses the phrase "societal values" at several points without clearly identifying what those values are. In paragraph seven he equates "societal values" with such emotions as love and hate, and by the end of the paragraph he even suggests an undefined relationship between "societal values," filial love, and powerlessness. On the whole, however, this essay is the work of a writer ready to do well in freshman English.

UC Student Essay Number 2 - Clear Fail

A CASE OF ANOMIE

I choose topic #3 because I think that Angelo's depression somehow related to the needs which he had been hiding and missing since his childhood and now is bothering him in earlier years.

Angelo's depression stems from the background of his family. As Angelo mentioned himself, his childhood and family life had been a very unhappy one. His father always not being there [home] was one reason. Maybe deep inside him, he felt this anger towards his father. He probably asked himself why couldn't he always be home and be a father just like every other father in the family of the neighborhood. I assume he would feel compassion for her mother for tolerating such a man and sharing and having such a miserable life with his father. Angelo said that her mother would often say that she had ruined her life by marrying their father. So another problem added to Angelo's feeling of anger and that was guilt and shame for having such a father.

But in other hand, Angelo was puzzled because he had always been enjoying his grandfather. In fact he had his best memories and best times spent with him. So somehow in his unconscious mind he was ashamed of his father but proud of his grandfather and this constant made him wonder; how could such a good and kind and caring person like his grandfather have an uncaring son whom is his own father. Angelo would never pull the two contrasting ropes together and so he could never pinpoint his puzzlement and anger and guilt which he had towards his father. He was always left cut-off in solving this matter.

This puzzlement was to remain silent in his adolscent years because

he knew no other way to manage it. After all that was the way his mother used to cope with it. After complaining a lot and a final fight with Mr. Cacci, Mrs. Cacci chose the way of silency and boredom which was working all day long and coming home, watching tv as usuall, seldom laughing or conversing with her children. As it was said, this pattern continued into Angelo's young adulthood.

Also that is probably why Angelo's relationship with his girlfriend and the previous one started to frizzle. After all the attitude of being silent and boring had only worked for him in his family in order to survive, and now unconciously he chose this attitude towards his girlfriend hoping that it would work out, which for a second time turned out to be unsuccessful.

Angelo's roots come from an Italian stock, besides living in an Italian neighborhood during childhood. Its culture is apparently different from American cultures. Italians have got that getting-together, temperous, shouting, joying mood in their blood. As seen in italian movies, streets are narrow, houses are small and close to each other, windows are open and everybody seems to be heard talking and chatting, little and young children playing and kicking balls among themselves.

This had been Angelo's home and neighborhood and is probably the way he thinks of it now; which is very contrasting to the one which he is now living in; A high rise apartment building occupied by single people. This is a reason for one to feel cut off, disoriented and rootless.

Going to the army was another way for him to be unharmed. As he

described the army as being uneventful, which was a chosen attitude he thought would do him good and support him in life.

Getting desciplined in life, he continued on to fight the time-to-time depression he had. But after the last failure [breaking up with his girlfriend] he believed that something was really wrong, concerning his emotions and fell into this deep continuing depression.

Comments

In attempting to analyze the causes of Angelo's depression, this writer treats some of the topics suggested; he mentions family background, relationships with girlfriends, and military and work history. Except in the essay's title, however, he fails to analyze these topics in terms of anomie. For this reason, the essay both fails to respond to the assignment and lacks any consistent pattern of its own. Even the essay's astute contrast between Angelo's Italian neighborhood and his present high-rise and the relation this contrast has to alienation must be inferred by the reader.

Mirroring this writer's limited ability to develop a focused essay on the topic are his difficulties in controlling English syntax and idiom. Although the writer usually marks sentence boundaries accurately (but see the second sentence of the penultimate paragraph), the essay is filled with misused parts of speech ("constant" for "constantly"), inappropriate verb tenses ("Angelo was puzzled because he had always been enjoying his grandfather"), and incorrect pronouns ("her mother," "whom is his own father"). The writer misuses even the most common idiom ("in other hand" for "on the other hand") and metaphors ("Angelo could never pull the two contrasting ropes [for 'threads'] together"). This essay is troublesome because the writer might profit more from an advanced course in English as a Second Language than from a remedial composition course.

UC Essay Examination Example Number 2

In his commencement speech at the University of Southern California this spring, John B. Slaughter, director of the National Science Foundation, said:

> A recent survey by the National Science Foundation found that 86% of adults believe scientific discoveries are largely responsible for our standard of living in the United States. . . but 85% believe that most citizens are not sufficiently informed to choose which technologies to develop. I am troubled by this public reluctance to participate in scientific debate.

Accept Mr. Slaughter's challenge to participate in the scientific debate regarding the future of our country by arguing in favor of the development of ONE particular technology or scientific advancement. Be specific in relating why the advancement you propose would be an important one for our society.

You will have 90 minutes to write your essay, which will be judged on its organization, the development of its argument, and the quality of its sentences.

UC Essay Number 3 - Marginal Pass

SUN ENERGY

Each time the oil producing and exporting countries meet, the U.S. observes and waits to see what prices we will be forced to pay because of our dependence on foreign oil. It is time that we look for a way to decrease the dependence that we have developed, while at the same time creating a method that can provide us with the power to run the everyday comforts that we enjoy. I believe that the development of solar energy is the most feasible answer at this time to our increasing energy crisis.

The advancement of solar energy technology could become the solution to the world-wide energy crisis. The advantages of solar energy far outweigh the costs of their development, and the initial expense of solar panels are an investment that most people do not

UC 83
Marginal Fail

regret. The sun's energy is provided free. All we must do is harness this source.

Besides the economic advantages of using solar power, there is another advantage that in this crowded world is becoming more and more important. Solar energy is completely safe to both humans and our environment. Unlike nuclear energy, there is no harmful waste that must be disposed of in our oceans or our deserts from solar power. Solar power is natural and clean. We can use the energy that already exists and not have to worry about killing ourselves or our coinhabitants at the same time.

Another important factor that supports the development of solar technology is the freedom it can give us. By this I mean that the United States could provide itself with energy instead of depending on the O.P.E.C. cartel. If we can function independently, we would be less inclined to intervene in foreign wars because our energy source would not be threatened. In addition, with our energy problem answered we could concentrate our efforts on ways to raise the standard of living. Instead of paying exorbitant energy bills, people could use the money for self enjoyment or possibly invest their funds, thus stimulating the nation's economy.

Perhaps the most convincing fact that supports the pursual of solar energy is the fact that the supply is completely unlimited. Oil will run out, and strip mining will not yield the energy needed forever. The sun, however, will be here as long as we are, and as energy needs increase the sun will be able to provide as much as we want or need. It is true that we have an energy crisis on our hands, but I do not believe

UC #3
Marginal Pass

that we can honestly say there is an energy shortage as long as the sun exists.

The advantages of a solar powered United States are obvious. Solar energy is economical, it is safe to the environment, it can grant us some much needed independence, and lastly, it is virtually unlimited. We have many energy options--nuclear, geo-thermal, coal--and we are free to pursue any one. But I believe that the development of solar energy technology will prove to be our best course of action to follow.

Comments

This essay begins with a clear statement of the problem as the writer sees it, then offers a thesis that responds to the challenge of the exam and guides development of the following paragraphs, which provide general though little specific supporting detail. The absence of such detail reduces a potentially strong argument to a barely adequate one. Nor does the summarizing conclusion, rhetorically effective though it may be, advance the writer's case.

At the sentence level the prose is undistinguished and falters at several points: for example, the predication and grammar problems in paragraph two ("the initial expense of solar panels are an investment"); the predication and modification problems in paragraph three ("Unlike nuclear energy, there is..."); the aberrant diction in paragraph five ("The pursual of solar energy"). Nevertheless, control of sentence structure, grammar, and diction is adequate. On balance, the writer is prepared to enter a regular freshman composition course.

UC Student Essay Number 4 - Marginal Fail

Geothermal Energy, American's "Miracle"

In today's society, the questions concerning our country's financial future are frequently debated. Fear and confusion are quite common. People are worried about America's financial strength and how it will affect themselves. The problems that these Americans are presently facing resulted from their own ignorance towards this country's own resources. They want the government to search world wide for a "miracle" that will pull America out of its economical slump, and place it back on top. They are predicting that this "miracle" is going to be something unimaginable, however, these people are overlooking something that is in great supply, has many uses, and has been readily available for a long time. The only thing that geothermal energy needs to become the "miracle" that they are searching for is public awareness and support.

Unlike our supply of fossil fuels, our geothermal energy supplies are almost boundless. These are potential geothermal fields all over the West Coast, the Mid-West, the Gulf Coast, and even some in the eastern United States. Therefore, the amount of untapped energy that America posseses is amazing.

The supply of geothermal energy is only one aspect that is huge, and basically untapped. The many and varied uses of this "miracle" are almost endless. Presently, its hot water is being used for heating homes, greenhouses, and water in fisheries, the steam is being used to drive turbines and produce electricity. In the future geothermal energy may be used to heat residential districts throughout communities, or

UC 84
Marginal Fail

operate public transportation systems. Many companies are already researching the boundless uses of this energy.

Although very little is known about geothermal energy, we do know that it has been around for a very long time. Many people realized its tremendous potential long ago, but were taken seriously only in the last century.

America is at a crucial turning point towards the future. The people need to become aware of this country's own potentials. Many other countries including Japan, Great Britain, and Canada have already started to harness some of their geothermal energy potential. We can't afford to overlook, and remain ignorant towards our financial problems. Geothermal energy could just be that "miracle." If we began harnassing our energy potential we wouldn't have to financially depend on other countries. Also, with advances being made we could use geothermal energy as a commodity with which we could trade, sell, or otherwise use commercially. Now is the time that we must use to advance in an energy supply that is virtually boundless to us, and needed by other countries. Geothermal energy is our financial future.

Comments

This essay is on topic and attempts to be persuasive. Yet it is slow and unclear in arriving at a thesis, and its supporting paragraphs are too often undeveloped and unconvincing. Paragraphs 2 and 4, for example, lack specific development, as reflected in their undue brevity, and the final paragraph lacks cohesiveness.

Although the writer attempts to use a variety of sentence structures, there are a number of problems with syntax ("with advances being made we could use geothermal energy as a commodity with which we could trade, sell, or otherwise use commercially" par. 5); idiomatic English ("turning point towards the future" par. 5); weak predication ("the supply is one aspect that is huge and basically untapped" par. 3). The writer of this essay is a typical candidate for instruction in Subject A.

APPENDIX II

ACADEMIC COMPETENCIES IN SPEAKING AND LISTENING, REASONING, AND STUDYING

In preparing the statements on preparation in English and mathematics, the Intersegmental Committee reviewed the recommendations on academic preparation recently developed under the auspices of the College Board's Project EQuality. These recommendations are found in Preparation for College in the 1980s and were the outgrowth of discussions during the 1980-81 academic year involving more than 600 representatives from all levels of education in the United States. They have been distributed by the College Board for nationwide consideration for the purpose, in part, of provoking "a broad national dialogue that will lead to a national consensus about what constitutes preferred patterns of preparation for college and how these patterns might be most effectively developed and implemented in the secondary school curriculum over the next 10 years."

The Academic Senates endorse the basic academic competencies contained in the College Board's Preparation for College in the 1980s. The Senates' "Statement on Competencies in English and Mathematics Expected of Entering Freshmen" incorporates the reading skills enumerated by Project EQuality, but provides greater specificity to the skills in writing and mathematics than is found in the latter document.

College and university faculty expect entering freshmen to possess competencies in writing, reading, mathematics, speaking and listening, reasoning, and studying. There are many reasons for this expectation. As Project EQuality noted in Preparation for College in The 1980s:

- *Basic Academic Competencies are developed abilities; they are the outcomes of learning and intellectual discourse. They are acquired when there are incentives and stimulation to learning and when there is an encouraging learning environment. There are different levels of competency; they can be defined in measurable terms. They are academic. They are basic.*

- *Basic Academic Competencies are interrelated to and interdependent with the basic subject-matter areas. Without such competencies, the knowledge of literature, history, science, languages, mathematics, and all other disciplines is unattainable.*

- *Basic Academic Competencies are not substitutes for drive, motivation, interest, intelligence, experience, or adaptability. Nor are basic academic competencies social coping skills even though we recognize that coping skills are crucial to success in school, life, and work. Coping skills are simply another important matter which we have decided not to subsume under the area of Basic Academic Competencies.*

- *Basic Academic Competencies provide a link across the disciplines of knowledge although they are not specific to the disciplines. Teaching that is done in ignorance of, or in disregard for, such competencies and their interrelationships to each of the subject-matter areas is inadequate if not incompetent.*

- *Basic Academic Competencies provide a way to tell students what is expected of them. The knowledge of what is expected is crucial to effective learning; its absence dooms much of learning to inanity.*

The speaking and listening, reasoning, and studying competencies listed below are taken from Preparation for College in the 1980s. The Academic Senates believe that these skills also deserve wide dissemination among California high school students and recommend that the skills be developed and strengthened in all high school courses.

SPEAKING AND LISTENING COMPETENCIES

- *The ability to engage critically and constructively in the exchange of ideas, particularly during class discussion and conferences with instructors.*

- *The ability to answer and ask questions coherently and concisely, and to follow spoken instructions.*

- *The ability to identify and comprehend the main and subordinate ideas in lectures and discussions, and to report accurately what others have said.*

- *The ability to conceive and develop ideas about a topic for the purpose of speaking to a group; to choose and organize related ideas; to present them clearly in Standard English; and to evaluate similar presentations by others.*

- *The ability to vary one's use of spoken language to suit different situations.*

REASONING COMPETENCIES

- *The ability to identify and formulate problems, as well as the ability to propose and evaluate ways to solve them.*

- *The ability to recognize and use inductive and deductive reasoning, and to recognize fallacies in reasoning.*

- *The ability to draw reasonable conclusions from information found in various sources, whether written, spoken, tabular, or graphic, and to defend one's conclusions rationally.*

- The ability to comprehend, develop, and use concepts and generalizations.

- The ability to distinguish between fact and opinion.

STUDY COMPETENCIES

- The ability to set study goals and priorities consistent with stated course objectives and one's own progress, to establish surroundings and habits conducive to learning independently or with others, and to follow a schedule that accounts for both short- and long-term projects.

- The ability to locate and use resources external to the classroom (for example, libraries, computers, interviews, and direct observation), and to incorporate knowledge from such sources into the learning process.

- The ability to develop and use general and specialized vocabularies, and to use them for reading, writing, speaking, listening, computing, and studying.

- The ability to understand and follow customary instructions for academic work in order to recall, comprehend, analyze, summarize, and report the main ideas from reading, lectures, and other academic experiences; and to synthesize knowledge and apply it to new situations.

- The ability to prepare for various types of examinations and to devise strategies for pacing, attempting or omitting questions, thinking, writing, and editing according to the type of examination; to satisfy other assessments of learning in meeting course objectives such as laboratory performance, class participation, simulation, and students' evaluations.

- The ability to accept constructive criticism and learn from it.

The abilities listed above constitute the key abilities in learning how to learn. Successful study skills are necessary for acquiring the other competencies--reading, writing, speaking and listening, mathematical, and reasoning. Without good study skills, students are apt to be inefficient in their work. Moreover, students should understand the importance of attitude in acquiring the basic study competencies. Students who show a desire to take personal responsibility for their own progress, who understand the value of making full use of teachers as resources, and who conduct themselves in ways that make learning possible for their classmates are more likely to succeed in their own efforts to acquire the basic competencies.

APPENDIX III

RECOMMENDATIONS OF THE BOARD OF GOVERNORS OF THE MATHEMATICAL ASSOCIATION OF AMERICA AND THE BOARD OF DIRECTORS OF THE NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

The Board of Governors of the Mathematical Association of America and the Board of Directors of the National Council of Teachers of Mathematics make the following recommendations:

1. *Proficiency in mathematics cannot be acquired without individual practice. We, therefore, endorse the common practice of making regular assignments to be completed outside of class. We recommend that parents encourage their children to set aside sufficient time each day to complete these assignments and that parents actively support the request of the teachers that homework be turned in. Students should be encouraged to develop the ability to read mathematics.*

2. *Homework and drill are very important pedagogical tools used to help the students gain understanding as well as proficiency in the skills of arithmetic and algebra; but students should not be burdened with excessive or meaningless drill. We, therefore, recommend that teachers and authors of textbooks step up their search for interesting problems that provide the opportunity to apply these skills. We realize that this is a difficult task, but we believe that providing problems that reinforce manipulative skills as a byproduct should have high priority, especially those that show that mathematics helps solve problems in the real world.*

3. *We are aware that teachers must struggle to maintain standards of performance in courses at all levels from kindergarten through college and that serious grade inflation has been observed. An apparent growing trend to reward effort or attendance rather than achievement has been making it increasingly difficult for mathematics teachers to maintain standards. We recommend that mathematics departments review evaluation procedures to insure that grades reflect student achievement. Further, we urge administrators to support teachers in this endeavor.*

4. *In light of 3 above, we also recognize that advancement of students without appropriate achievement has a detrimental effect on the individual student and on the entire class. We, therefore, recommend that school districts make special provisions to assist students when deficiencies are <u>first</u> noted.*

5. *We recommend that cumulative evaluations be given throughout each course, as well as at its completion, to all students. We believe that the absence of cumulative evaluation promotes short-term learning. We strongly oppose the practice of exempting students from evaluations.*

6. *We recommend that computers and hand calculators be used in imaginative ways to reinforce learning and to motivate the student as proficiency in mathematics is gained. Calculators should be used to supplement rather than to supplant the study of necessary computational skills.*

7. *We recommend that colleges and universities administer placement examinations in mathematics prior to final registration to aid students in selecting appropriate college courses.*

8. *We encourage the continuation or initiation of joint meetings of colleges and secondary school mathematics instructors and counselors in order to improve communication concerning mathematics prerequisites for careers, preparation of students for collegiate mathematics courses, joint curriculum coordination, remedial programs in schools and colleges, and exchange of successful instructional strategies, planning of in-service programs, and other related topics.*

9. *Schools should frequently review their mathematics curricula to see that they meet the needs of their students in preparing them for college mathematics. School districts that have not conducted a curriculum analysis recently should do so now, primarily to identify topics in the curriculum which could be either omitted or de-emphasized, if necessary, in order to provide sufficient time for the topics included in the above statement. We suggest that, for example, the following could be de-emphasized or omitted if now in the curriculum:*

   (A) logarithmic calculations that can better be handled by calculators or computers,

   (B) extensive solving of triangles in trigonometry,

   (C) proofs of superfluous or trivial theorems in geometry.

10. *We recommend that algebraic concepts and skills be incorporated whenever possible into geometry and other courses beyond algebra to help students retain these concepts and skills.*

APPENDIX IV

SAMPLE PROBLEMS IN MATHEMATICS

The following sets of problems provide samples illustrating the concepts and skills which students should acquire through studying the topics listed in Sections II and III. The exercises are examples of the type of problems students should be able to solve at the conclusion of the respective course. These lists do not provide examples of final examinations since they are neither comprehensive nor balanced in terms of area and difficulty. Furthermore these lists are not intended to serve as curriculum guides for courses and topics and should not be used as such. An abbreviated list can be compiled using the starred problems.

ALGEBRA I

1. Arithmetic operations with positive and negative rational numbers.

   (a) Find $-4.7 + 5.3$

   * (b) Find $1\frac{9}{10} - 7\frac{1}{2}$

   (c) Find $\left(-\frac{2}{3}\right)\left(-\frac{6}{11}\right)$

   * (d) Find $-6 \div .6$

   (e) Find $-3 + |-7|$

   (f) Find $|-3 + -7|$

2. Arithmetic operations with literal symbols.

   (a) Simplify: $3a + b - a - 7b$

   * (b) Simplify: $\frac{2}{a} + \frac{3}{b} - \frac{5}{a}$

   (c) Evaluate $\frac{xy - w}{xz - y}$ if $x = 2$, $y = 3$, $w = 4$, $z = 5$

   Linear equations and their graphs.

3. (a) Solve: $4(3t + 2) - 5t = 4$

   (b) Solve: $\frac{3x}{4} + \frac{2x}{4} + \frac{9}{8} = 0$

   * (c) Solve: $\frac{2}{3x + 1} + 2 = \frac{2}{3}$

   (d) Solve: $\frac{5}{2x - 3} - \frac{8}{3 - 2x} = 1$

   (e) Graph $y = 2x + 1$

   (f) Solve $|2x - 1| = 3$

4. Inequalities.

   (a) Solve $3x - 1.4 < 2.2$

   • (b) Solve $4x - 1\frac{1}{2} \geq 2\frac{3}{4} + x$

   (c) Solve $-2x > 6$

5. Ratio, proportion, and variation.

   (a) If V varies inversely as the square of S and V = 512 when S = 30, find V when S = 40.

   • (b) If y varies directly as x and y is 36 when x is 4, find y when x is 6.

6. Operations with integer exponents.

   (a) Simplify $\frac{(5ab^2)(2a^3b)^2}{a^3b^2}$

   • (b) Express $(x^4y^{-3})(x^{-7}y^2)^{-1}$ without parentheses or negative exponents.

   (c) Express $\frac{x^{-2}y^3z}{x^{-1}y^{-2}z}$ without negative exponents and simplify.

7. Operations with polynomials and rational expressions.

   (a) Expand $(2x + 3)^2$

   • (b) Expand $(x^2 - 3x + 5)(2x - 1)$

   (c) Simplify: $\frac{18x^2y^3 - 12x^4y + 15x^3y^2}{3xy}$

   (d) Simplify: $\frac{x^2 + 2x + 1}{5x - 5} \cdot \frac{15}{x + 1}$

   • (e) Simplify: $\frac{2}{x^2 - 9} + \frac{1}{x + 3} - \frac{3}{x - 3}$

   (f) Simplify: $\frac{\frac{x}{x^2 + 6x + 9}}{\frac{x^2}{x + 3}}$

   (g) Simplify: $\frac{\frac{2}{a} + \frac{1}{4a}}{a + \frac{a}{4}}$

8. Systems of linear equations and their solutions.

   • (a) Graph $2x + 3y = 6$ and $x - y = 3$ and find their point of intersection.

   (b) Find x and y: $\begin{cases} 3x + y = 4 \\ 2x - 3y = 10 \end{cases}$

9. Special products and factoring.

   (a) Factor completely: $27x^3 - 3x$

   • (b) Factor completely: $3x^2 + 20x + 12$

10. Solution of quadratic equations.

   (a) Solve: $49x^2 - 25 = 0$

   • (b) Solve: $x^2 + 3x - 2 = 0$

11. Use of formulas.

   (a) Find an expression for the area of a triangle whose base measures $6x$ and height measures $8y$.

   • (b) If the diameter of a circle is a and its circumference is 20 cm., find the circumference of a circle whose diameter is $\frac{3}{2}a$.

   (c) If the volume of a cube is 27 cm^3, find the length of one side.

12. Elementary word problems.

   (a) The base of a rectangle is twice the height. If the area is $98m^2$, find the dimensions.

   (b) Veronica leaves home walking at 3 miles per hour. One half hour later, her mother goes after her walking at 4 miles per hour. Find how long it will take her mother to catch up with her.

   • (c) A company currently owns a copy machine that takes 5 hours to print 5,000 copies of a newsletter. If the company buys a second copier that prints 1,500 copies per hour and uses both machines, how long will it take to print these newsletters?

GEOMETRY

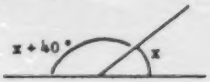
Students must have mastered the material in Algebra I before beginning a course in Geometry.

1. Angles.

(a) The measure of an angle is 23° less than the measure of its complement. Find the angle measure.

• (b) Given: AB ⊥ BC
AD ⊥ DC
∠1 ≅ ∠3

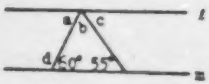
Prove: ∠2 ≅ ∠4

(c) Given: 

Find the value of x.

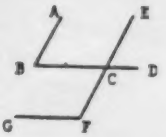
2. Parallel lines.

• (a) If lines ℓ and m are parallel, find the measures of all the lettered angles.



(b) Given: ED ∥ GF
∠B and ∠F are supplementary

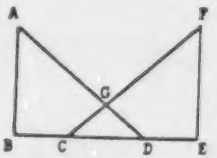
Prove: AB ∥ EF



• 3. Congruent triangles.

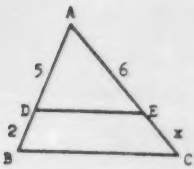
Given: ∠A ≅ ∠F
∠B and ∠E are right angles
BC ≅ DE

Prove: △ABD ≅ △FEC



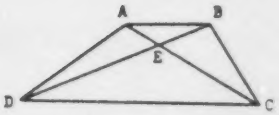
4. Similar Triangles.

• (a) Find x if DE ∥ BC.



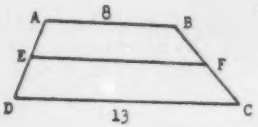
(b) Given: AB ∥ CD

Prove: BE · EC = AE · ED



5. Rectilinear figures.

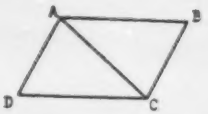
(a) If AB ∥ CD and E and F are midpoints, find the length of EF.



• (b) Given: AB = CD

AD = BC

Prove: AB ∥ CD

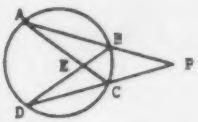


6. Circles.

(a) Find the length of CD.

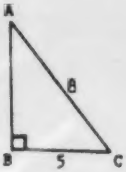
• (b) Given: $\angle A = \angle D$

Prove: $\frac{AE}{AB} = \frac{DE}{DC}$



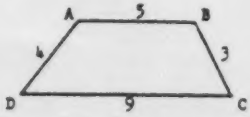
• 7. Pythagorean theorem.

Find the length of AB if $\angle B = 90°$.



8. Formulas for perimeters, areas, and volumes.

(a) Find the area of this trapezoid if $\angle D = 45°$.



(b) Find the surface area in square centimeters of a sphere whose radius is 3 cm.

(c) Find the volume in cubic centimeters of a right circular cylinder with altitude 10 cm. if the radius of a base is 4 cm.

(d) A farmer wants to fence a rectangular portion of his land with 800 meters of fencing. He uses 150 meters of fencing along the first side. How much area will be enclose?

• (e) An oval running track is made by placing two semicircles along the shorter sides of a rectangle which measures 350 feet by 140 feet. How far is it around the track? (Use $\pi = \frac{22}{7}$.)

• 9. Constructions.

Divide line segment AB into 3 congruent segments using compass and straightedge only.

• 10. Locus.

Describe the locus of points equidistant from two given intersecting lines.

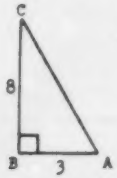
• 11. Coordinate geometry proof.

Use coordinate geometry to prove that the diagonals of a parallelogram bisect each other.

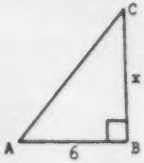
12. Right triangle trigonometry.

• (a) Given: ΔABC with $\angle B = 90°$

Find: sin A, tan A, cos C



(b) If $\angle B = 90°$, use a trigonometric function of $\angle A$ to express the length of x.

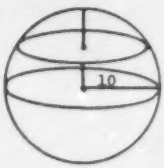


• 13. Word problems.

A man six feet tall is standing ten feet away from a point directly under a street light. If the tip of his shadow extends five feet further from the light, how high off the ground is the light?

14. Intuitive spatial geometry.

(a) The radius of a sphere is 10 cm. What is the radius of a circle which is the intersection of the sphere and a plane 5 cm from the center of the sphere?



• (b) A cube has an edge length of 5 inches.

What is the length of an interior diagonal?

ALGEBRA II

Before beginning this course the student must have mastered the content of Algebra I and should have retained this mastery by continuous review throughout Geometry.

1. Simplification of algebraic expressions.

   Simplify:

   (a) $\frac{12a^3bc^2}{3ab^2c}$

   *(b) $6x - [2x - [2(y - 3x)] - 5y]$

   (c) $\frac{1}{a - b} - \frac{1}{a}$

2. Fractional exponents and radicals.

   * (a) Simplify: $\left(\frac{9^5x^{3/2}y^{5/2}}{81x^{-1/2}y^{-1}}\right)^{1/2}$

   (b) Express as a single radical: $\sqrt[3]{\sqrt{a^3}}$

3. Absolute value and inequalities.

   (a) Evaluate $|a - 1| - |-a| + 1$ when $a = -2$.

   * (b) Solve: $|3 - 5x| \leq 12$

4. Operations on polynomials.

   Simplify:

   (a) $\frac{3x - 1}{(x - 1)(x + 1)} - \frac{x + 3}{(x + 1)(x + 2)} - \frac{1}{x + 2}$

   * (b) $\frac{\frac{1}{x + 1} - \frac{1}{x + 2}}{\frac{1}{x + 2} - \frac{1}{x + 3}}$

   (c) $\frac{\frac{x^2 - x - 2}{x^2 - x - 6}}{\frac{x^2 + 8x + 7}{x^2 - 6x + 9}}$

77

5. Quadratic equations.

(a) Solve by completing the square: $2x^2 + 4x + 1 = 0$

(b) Solve: $\sqrt{2x - 5} - \sqrt{x - 2} = 2$

(c) Determine the values of m for which the equation $5x^2 - 4x + 2 + m(4x^2 - 2x - 1) = 0$ will have equal roots.

• (d) A grocer sold oranges at a dollar a bag and raised the price per dozen by 10 cents by reducing the number of oranges in a bag by 4. Find the original number of oranges in a bag, and the original price per dozen.

6. Complex numbers

(a) Simplify $\sqrt{-5}\sqrt{-10}$

(b) Calculate $(4 + 7i)(5 - 3i)$

• (c) Calculate $\frac{5 + 5i}{2 + i}$ in standard form

(d) Solve $x^2 - x + 3 = 0$

• 7. Quadratic inequalities.

Solve: $x^2 - 2x - 3 > 0$

8. Graphing linear and quadratic functions and inequalities.

(a) Determine the slope of the line whose equation is $2x + 3y - 6 = 0$, and sketch the line.

• (b) Write an equation of the line which passes through the points $(-2, 3)$ and $(1, -2)$ and sketch its graph.

(c) Sketch the graph of $y = x^2 - 3x + 2$.

(d) Graph the solution of the system $\begin{cases} y - x + 2 > 0 \\ x^2 + y^2 < 9 \end{cases}$.

9. Equations with rational expressions.

Solve:

(a) $\frac{x+2}{x-2} - \frac{x-2}{x+2} = 1 - \frac{x^2}{x^2-4}$

• (b) $\frac{3w+5}{2w-1} = \frac{6w+1}{4w-1}$

10. Systems of linear systems.

Solve:

• (a) $\begin{cases} x + 2y - z = 6 \\ 2x - y + 3z = -13 \\ 3x - 2y + 3z = -16 \end{cases}$

(b) $\begin{cases} x + y - z = 0 \\ 2x - y - 8z = 0 \\ 3x + 5y + z = 0 \end{cases}$

(c) If either 25 pounds of flour and 10 pounds of sugar or 16 pounds of flour and 16 pounds of sugar can be purchased for $3.20, find the price of each per pound.

11. Polynomial equations.

• (a) Solve: $x^4 - x^3 + 2x^2 - 4x - 8 = 0$

(b) Find the values of m for which $x - 3$ will divide $x^3 - m^2x^2 - mx - 6$ with a remainder of 15.

(c) Write an equation of lowest possible degree and with integral coefficients having 0, $1 - \sqrt{2}$, $1 - 2i$ among its roots.

12. Binomial theorem.

• (a) Write the expansion of $(n^2 - 3m)^6$ and simplify the terms.

(b) Find the coefficient of x^3 in the expansion of $(x^3 - \frac{1}{x})^{13}$.

13. Arithmetic and geometric sequences and series.

• (a) Find the 20th term and the sum of the first 20 terms of the sequence 4, 6, 8, ...

(b) A body dropped from a height falls 16 feet during the first second, 48 feet the second second, 80 feet the third second, and so on. How far does the body fall during the sixth second? How far does it fall during the first 6 seconds?

(c) Find the 20th term and the sum of the first 20 terms of the sequence 4, -16, 64, ... (Leave your answer in terms of powers of 2.)

(d) The number of bacteria in a certain culture doubles every 3 hours. If there are N bacteria at the start, find the number that there will be in 24 hours.

14. Exponential and logarithmic functions and equations.

Solve:

(a) $4^{x+2} = 16^x$

• (b) $11^{2x-1} = 7^x$

(c) $20^x = 4^x$

(d) $\log_3 x = 1$

(e) $\log_x 32 = \frac{5}{3}$

(f) $\log_{2/3} \frac{16}{81} = x$

• (g) Write as a single logarithm: $\frac{1}{2}\log 52 - \frac{2}{3}\log 5 - 4\log 3$.

15. Functions.

(a) Find the domain and range of the function defined by $y = \sqrt{9 - x^2}$.

• (b) If $f(t) = 3t^2 + 4$, find $f(3t)$, $f(t + 1)$, $f(2)$, and $f(t + h) - f(t)$.

(c) If $f(x) = 3x - 2$, find the inverse $f^{-1}(x)$.

16. Word problems and estimation.

* (a) Which integral power of 10 gives the best approximation to $\frac{10^{1.02} \times 10^{-1.01}}{995} + 10^{-5}$?

(b) If $\log_2 15.9 = \log_x x$, which multiple of 10 gives the best approximation to x?

* (c) A bacteria population grows exponentially. At the start of an experiment the bacteria population numbers 1000. Two days later the population numbers 2000. What is the size of the population 5 days after the start of the experiment?

(d) The sum of the base b and the height h of a triangle is 24. What is the maximum area of a triangle satisfying these conditions?

TRIGONOMETRY

The full semester course in Trigonometry is to be taken only after mastery of the courses Algebra I, Geometry, Algebra II.

1. Trigonometric functions.

* (a) If θ is an angle whose terminal side passes through $(-4, 3)$, find $\sin\theta$ and $\sec\theta$.

(b) If $\csc\theta = -2$, and θ is in quadrant III, find $\tan\theta$ and $\cos\theta$.

(c) Given a circle of radius 2 centered at the origin. An angle in standard position subtends an arc of length $\frac{7\pi}{12}$ feet along the circle. Find the coordinates of the point of intersection of the circle and the terminal side of the angle.

2. Graphical characteristics of trigonometric functions.

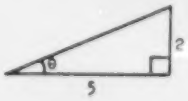
Sketch the graph of

* (a) $y = 2\sin(\frac{1}{2}x + \pi)$

(b) $y = \frac{1}{2}\tan(x + \frac{\pi}{4})$

3. Solution of right triangles.

(a) Determine the radian measure of the angle θ in the given figure.



* (b) A person standing on level ground away from a building observes that the angle of elevation of the top of the building is 30°. After moving 526 feet closer to the building the angle of elevation of the top of the building is observed to be 45°. How tall is the building?

4. Radian and degree measure.

• (a) Express in radian measure: $45°$, $270°$, $-315°$, $420°$.

(b) Express in degree measure: $\frac{\pi}{6}$, $-\frac{3\pi}{4}$, $\frac{8\pi}{15}$, $\frac{17\pi}{6}$

5. Trigonometric identities.

(a) If θ is in quadrant III and $\cos\theta = -\frac{5}{9}$, find $\sin\frac{1}{2}\theta$ and $\tan\frac{1}{2}\theta$.

Prove each of the following identities:

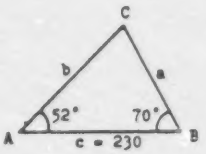
(b) $\sin\theta(\csc\theta - \sin\theta) = \cos^2\theta$

• (c) $\frac{\sin 2x}{1 - \cos 2x} = \cot x$

(d) $\frac{\sin(x + y)}{\cos(x - y)} = \frac{\tan x + \tan y}{1 + \tan x \tan y}$

• 6. Laws of sines and cosines.

(a) Determine the length of side a in the given figure.



(b) An airplane is moving with an air speed of 100 mph. The wind, blowing from the north at 20 mph, causes the plane to travel with a ground speed of only 90 mph. Find the direction the plane is heading and the direction it travels.

7. Inverse trigonometric functions.

(a) Find the value of $\tan \text{Arcsin}\left(\frac{-2}{\sqrt{13}}\right)$. ($\text{Arccos}\,\theta = \cos^{-1}\theta$)

• (b) Find the value of $\cos(2\,\text{Arcsin}\frac{3}{5})$.

(c) Solve for x: $\text{Arcsin}\,3x + \text{Arcsin}\,x = \frac{\pi}{2}$

(d) Sketch the graph of $y = \text{Arcsin}\frac{1}{2}x$.

(e) Find the value of $\sin(\text{Arccos}\frac{5}{13} + \text{Arctan}\frac{12}{5})$.

8. Solution of trigonometric equations.

Find all values of x (using radian measure), $0 \leq x < 2\pi$:

(a) $\sin 2x \sec^2 x = 2 \sin 2x$

• (b) $\tan^2 x - 3 \tan x + 2 = 0$

(c) $2 \sin x + \cot x - \csc x = 0$

(d) $\cos(\text{Arcsin } x) = \sqrt{1 - x^2}$

9. Polar coordinates and vectors.

• (a) Write the polar form of the equation $x^2 - 2x + y^2 = 3$.

• (b) Sketch the vectors $\vec{A} + \vec{B}$ and $\vec{B} - \vec{A}$:

(c) Express $2(-3, 1, 0) + 3(5, -7, 1)$ as a single vector.

(d) Compute the inner product of $(4, -2, 1)$ and $(-1, 3, 0)$.

(e) Find the norm of the vector $(1, -3, 2)$.

10. Complex numbers.

(a) Plot the complex number $4 + 3i$ and write the corresponding trigonometric form.

(b) Change $4(\cos 60° + i \sin 60°)$ to algebraic form.

• (c) Use the polar form for $1 - i\sqrt{3}$ to find $(1 - i\sqrt{3})^6$.

ANALYTIC GEOMETRY AND MATHEMATICAL ANALYSIS

This course assumes mastery of trigonometry and its prerequisite courses.

1. Coordinate geometry including conic sections.

   (a) Find the center and radius of the circle with equation $x^2 + y^2 - 10x + 4y + 17 = 0$.

   (b) Write an equation of a circle passing through (6, -2) with center at (-1, 3).

   (c) Write an equation of the directrix for the parabola $3y^2 - 16x = 0$.

   • (d) Give the coordinates of the foci of the ellipse $9y^2 + 108y + 4x^2 - 56x + 484 = 0$.

   (e) Write the equations of the asymptotes of the hyperbola $16x^2 - 25y^2 = 400$.

   (f) Write an equation for the hyperbola with foci at (5, 1) and (-3, 1), asymptotes with slopes ± 2.

   (g) Find an equation of the line tangent to the circle $x^2 + y^2 = 169$ at the point (-5, 12).

2. Rational functions and their graphs.

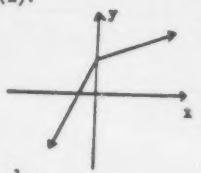
   (a) Describe all asymptotes of $y = \frac{x}{x^2 - 9}$.

   • (b) Graph: $y = \frac{3}{x(x - 1)}$

3. Elementary functions and their inverses.

   • (a) If $f(x) = x^3 - 5$, find the inverse $f^{-1}(x)$.

   (b) Given the graph of function f, graph its inverse.



   (c) Given $g(x) = \sqrt{x} + 4$, find the inverse $g^{-1}(x)$.

4. Review polar coordinates and vectors.

(a) Identify the conic section represented by the equation $r = \frac{2}{1 - \cos\theta}$.

(b) Write a polar equation for the circle with equation $x^2 + y^2 = 36$.

(c) Find x so that the vectors $(2,-4)$ and $(3,x)$ are orthogonal.

5. Graphing in polar coordinates.

Graph: $r = \frac{4}{3 + 2\sin\theta}$

6. Introduction to linear algebra.

(a) Evaluate the determinant: $\begin{vmatrix} -3 & 4 \\ 1 & -6 \end{vmatrix}$

Perform the indicated matrix operations:

(b) $\begin{bmatrix} 2 & -3 \\ 4 & -5 \end{bmatrix} + \begin{bmatrix} 1 & 0 \\ -2 & 3 \end{bmatrix} =$

(c) $\begin{bmatrix} 2 & 1 \\ -3 & 0 \end{bmatrix}\begin{bmatrix} -1 & 4 \\ 2 & -2 \end{bmatrix} =$

(d) Find the inverse of $\begin{bmatrix} 3 & -1 \\ 4 & 2 \end{bmatrix}$.

7. Mathematical induction.

Prove that for any positive integer n

$$1 + 2^2 + 3^2 + \cdots + n^2 = \frac{n(n + 1)(2n + 1)}{6}.$$

8. Parametric equations and their graphs.

(a) Write an equation in x and y for the line whose parametric equations are $y = 5 + t$, $x = 3 - t$.

(b) Write parametric equations for the line which passes through the points $(5, -1)$ and $(1, 7)$.

• 9. Lines and planes in space.

(a) Write an equation for the plane that passes through the points $(2,1,0)$, $(3,-2,1)$, $(0,3,4)$.

(b) Write an equation for the line that joins $(-1,-2,1)$ and $(1,0,-1)$.

(c) Find the coordinates of the point where the line $\frac{x-1}{2} = \frac{y+1}{-1} = \frac{z}{3}$ intersects the plane $3x + 2y - z = 5$.

10. Introduction to vectors in space.

(a) Determine the vector $a\hat{i} + b\hat{j} + c\hat{k}$ from the point $(2,-1,3)$ to the point $(5,-3,-2)$.

(b) If $\vec{A} = 2\hat{i} + 3\hat{j} - 4\hat{k}$ and $\vec{B} = -3\hat{i} + 4\hat{k} - 5\hat{j}$, determine the angle θ between these two vectors.

SAMPLE PROBLEMS -- ANSWERS

ALGEBRA I

1. (a) .6; (b) $-5\frac{3}{5}$; (c) $\frac{4}{11}$; (d) -10;
   (e) 1; (f) 10

2. (a) $2a - 6b$; (b) $\frac{3}{b} - \frac{3}{a}$; (c) $\frac{2}{7}$;

3. (a) $t = -\frac{12}{7}$; (b) $x = -\frac{9}{10}$ (c) $x = -\frac{5}{6}$; (d) $x = 8$

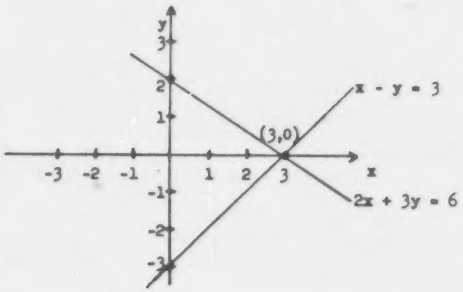
4. (a) $x < 1.2$ (b) $x \geq \frac{5}{12}$ (c) $x < 3$

5. (a) $V = 238$; (b) $y = 54$

6. (a) $20a^4b^2$; (b) $\frac{x^4}{y^5}$; (c) $\frac{y^5}{x}$

7. (a) $4x^2 + 12x + 9$; (b) $2x^3 - 7x^2 + 13x - 5$; (c) $6xy^2 - 4x^3 + 5x^2y$;
   (d) $\frac{3(x+1)}{x-1}$; (e) $\frac{-10 - 2x}{x^2 - 9}$; (f) $\frac{1}{x(x+3)}$; (g) $\frac{9}{5a^2}$

8. (a)



   (b) $x = 2$, $y = -2$

9. (a) $3x(3x - 1)(3x + 1)$; (b) $(x + 6)(3x + 2)$

10. (a) $x = \pm\frac{5}{7}$; (b) $x = \frac{-3 \pm \sqrt{17}}{2}$

11. (a) $24xy$; (b) 30 cm. (c) 3 cm.

12. (a) $h = 7$, $b = 14$ (b) $1\frac{1}{2}$ hours (c) 2 hours

GEOMETRY

1. (a) 33.5°; (b) show that $\angle 1$ and $\angle 2$ are complementary, as are $\angle 3$ and $\angle 4$; complements of equal angles are equal.

2. (a) $\angle a = 60°$, $\angle b = 65°$, $\angle c = 55°$, $\angle d = 120°$; (b) $\angle F$ and $\angle BCE$ are corresponding angles of parallel lines and therefore equal, by substitution $\angle B$ and $\angle BCE$ are supplementary, if the interior angles on the same side of a transversal are supplementary, the lines cut by the transversal are parallel.

3. $\angle B = \angle E$ because right angles are equal, $BD = BC + CD = DE + CD = CE$ by addition of the common segment CD, the triangles are congruent by AAS.

4. (a) $x = 12/5$; (b) $\angle BAE = \angle ECD$ and $\angle ABE = \angle EDC$ because they are alternate interior angles of parallel lines, $\triangle AEB \sim \triangle CED$ by AA, $\frac{AE}{EC} = \frac{BE}{ED}$ because corresponding sides of similar triangles are proportional, the product of the means equals the product of the extremes.

5. (a) 10.5; (b) $AC = AC$ so $\triangle ABC \cong \triangle CDA$ by SSS, $\angle BAC = \angle DCA$ which makes $AB \parallel CD$ because the alternate interior angles are equal.

6. (a) 8; (b) $\angle AEB = \angle DEC$ because they are vertical angles, $\triangle AEB \sim \triangle DEC$ by AA, corresponding sides of similar triangles are proportional.

7. $\sqrt{39}$

8. (a) $14\sqrt{2}$; (b) 36π sq. cm.; (c) 160π cc. (d) 37,500 sq. m. (e) 1240 ft.

9. (construction)

10. The locus is the two lines which bisect the angles formed by the given lines.

11. Use the midpoint formula to show that the midpoints of both diagonals coincide.

12. (a) $\sin A = \frac{8\sqrt{73}}{73} = \cos C$, $\tan A = \frac{8}{3}$; (b) $x = 6 \tan A$

13. 18 ft.

14. (a) $5\sqrt{3}$; (b) $5\sqrt{5}$

ALGEBRA II

1. (a) $\frac{4a^2c}{b}$; (b) $-2x + 7y$; (c) $\frac{b}{a(a-b)}$

2. (a) $27x^{7/4}$; (b) $\sqrt[6]{a^5}$

3. (a) 2; (b) $-\frac{9}{5} \leq x \leq 3$

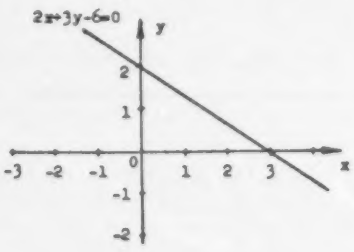
4. (a) $\frac{1}{x-1}$; (b) $\frac{x+3}{x+1}$; (c) $\frac{(x-2)(x+1)}{(x+2)(x+7)}$

5. (a) $\frac{2+\sqrt{2}}{2}$; (b) 27; (c) $-\frac{6}{5}$, 1; (d) 24 oranges per bag, 50¢ per dozen

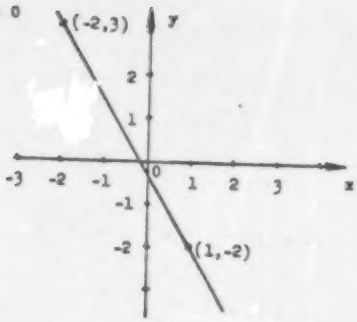
6. (a) $-5\sqrt{2}$; (b) $41 + 23i$; (c) $3 + i$ (d) $\frac{1 \pm \sqrt{11}\,i}{2}$

7. $x < -1$ or $x > 3$

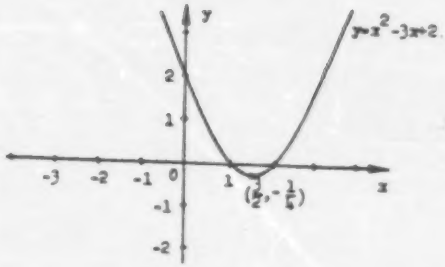
8. (a) slope: $-\frac{2}{3}$



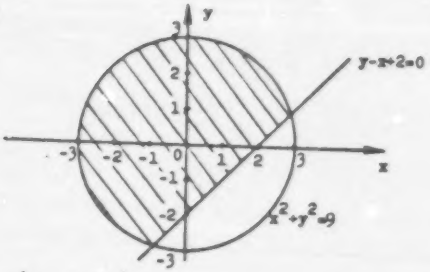
8. (b) $5x + 3y + 1 = 0$



(c)



(d)



9. (a) $-\frac{1}{2}$; (b) $\frac{4}{21}$

10. (a) $x = -1$, $y = 2$, $z = -3$; (b) $x = 3a$, $y = -2a$, $z = a$;
(c) 8¢ per pound for flour, 12¢ per pound for sugar

11. (a) $-1, 2, \pm 21$; (b) $-1, \frac{2}{3}$; (c) $x^5 - 4x^4 + 8x^3 - 8x^2 - 5x$

12. (a) $m^{12} - 18n^{10}m + 135n^8m^2 - 540n^6m^3 + 1215n^4m^4 - 1458n^2m^5 + 729m^6$

(b) $-\frac{13!}{9!4!}$

13. (a) 42, 460; (b) 176 ft., 576 ft.; (c) -2^{40}, $2^2\,\frac{1 - 2^{40}}{1 + 2^2}$;

(d) 128π

14. (a) 2; (b) $\frac{\log 11}{2 \log 11 - \log 7}$; (c) 0; (d) 3; (e) 8;

(f) 4; (g) $\log \frac{\sqrt{52}}{\sqrt[4]{5^2}\,3^4}$

15. (a) domain: $-3 \le x \le 3$, range: $0 \le y \le 3$; (b) $27t^2 + 4$,

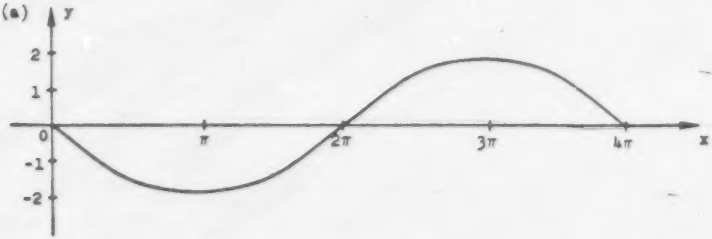
$3t^2 + 6t + 7$, 16, $6ht + 3h^2$; (c) $f^{-1}(x) = \frac{1}{3}x + \frac{2}{3}$

16. (a) 10^{-3} (b) 80 (c) $4000\sqrt{2}$ (d) 72

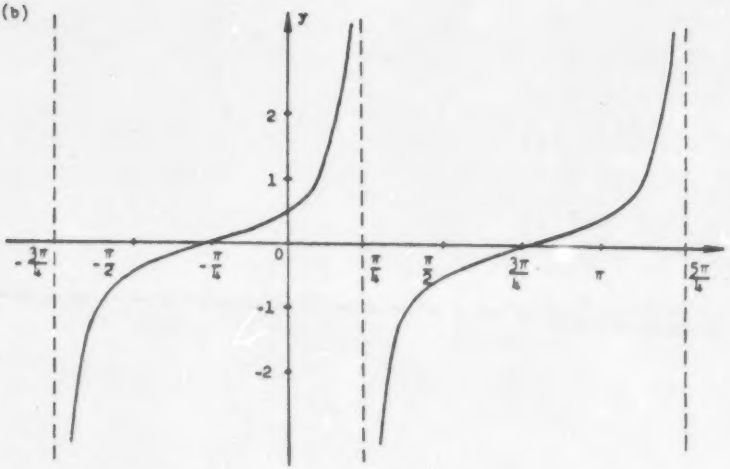
TRIGONOMETRY

1. (a) $\frac{3}{5}, -\frac{5}{4}$; (b) $\frac{\sqrt{3}}{3}, -\frac{\sqrt{3}}{2}$; (c) $(-\sqrt{3}, -1)$

2. (a)



2. (b)



3. (a) Arctan $\frac{2}{5} = .38$; (b) $\frac{526}{\sqrt{3} - 1}$ ft.

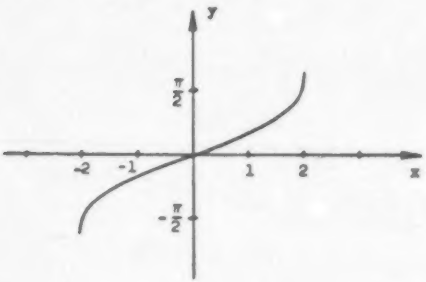
4. (a) $\frac{\pi}{4}$, $\frac{3\pi}{2}$, $-\frac{7\pi}{4}$, $\frac{7\pi}{3}$; (b) 30°, -135°, 96°, 510°

5. (a) $\frac{\sqrt{7}}{3}$, $-\sqrt{\frac{7}{2}}$

6. (a) $230 \frac{\sin 52°}{\sin 58°}$; (b) N 55° E or N 55° W, N 65° E or N 65° W

7. (a) $-\frac{2}{3}$; (b) $\frac{7}{25}$; (c) $\sqrt{\frac{1}{10}}$

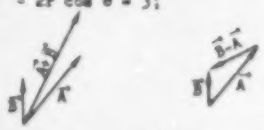
(d)



(e) $\frac{120}{169}$

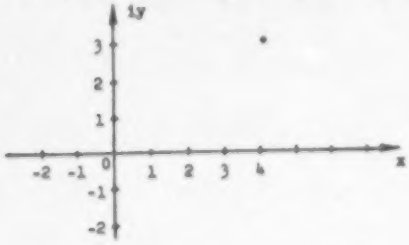
8. (a) $0, \frac{\pi}{6}, \frac{\pi}{2}, \frac{3\pi}{4}, \pi, \frac{5\pi}{6}, \frac{3\pi}{2}, \frac{7\pi}{6}$; (b) $\frac{\pi}{6}, .35\pi, \frac{3\pi}{4}, 1.35\pi$;
(c) $0, \frac{2\pi}{3}, \frac{4\pi}{3}$; (d) $0 \le x \le 1$

9. (a) $r^2 - 2r\cos\theta = 3$;
(b)



(c) (9, -19, 3); (d) -10; (e) $\sqrt{14}$

10. (a) $-4 + 3i = 5[\cos 37° + i \sin 37°]$

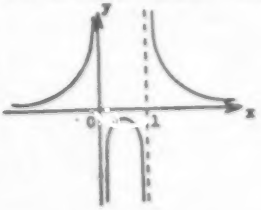


(b) $2 + 2\sqrt{3}\,i$; (c) 64

ANALYTIC GEOMETRY AND MATHEMATICAL ANALYSIS

1. (a) center $(-5, 2)$, radius $= 2\sqrt{3}$; (b) $(x + 1)^2 + (y - 3)^2 = 74$;
(c) $x = -\frac{4}{3}$; (d) $(7 + \sqrt{5}, -6), (7 - \sqrt{5}, -6)$; (e) $y = \pm\frac{4}{3}x$;
(f) $\frac{5(x-1)^2}{16} - \frac{5(y-1)^2}{64}$; (g) $12y - 5x = 169$

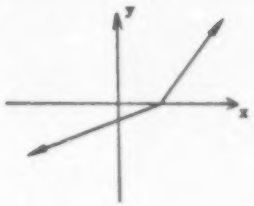
2. (a) $x = \pm 3$ (vertical), $y = 0$ (horizontal);
(b)



9-1

3. (a) $f^{-1}(x) = \sqrt[3]{x+5}$

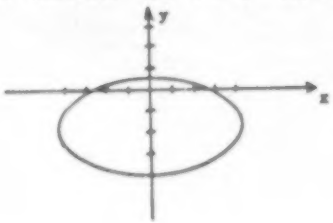
(b)



(c) $g^{-1}(x) = (x-4)^2$ for $x \geq 4$

4. (a) parabola; (b) $r = 6$; (c) $x = \frac{1}{2}$

5.



6. (a) 14; (b) $\begin{bmatrix} 3 & -3 \\ 2 & -2 \end{bmatrix}$; (c) $\begin{bmatrix} 0 & 6 \\ 3 & -12 \end{bmatrix}$; (d) $\begin{bmatrix} \frac{1}{5} & \frac{1}{10} \\ -\frac{2}{5} & \frac{1}{10} \end{bmatrix}$

8. (a) $x + y = 8$; (b) $y = 1 + 2t$, $x = 4 - t$ (other possibilities)

9. (a) $7x + 3y + 2z = 17$ (b) $\frac{x+1}{2} = \frac{y+1}{2} = \frac{z-1}{-2}$

(c) $(27, -10, -12)$

10. (a) $3\mathbf{i} - 2\mathbf{j} - \mathbf{k}$ (b) $\theta = \text{Arccos}\left(\frac{-6}{65}\sqrt{13}\right)$

$= 109.4°$

APPENDIX V

INTERSEGMENTAL COMMITTEE OF ACADEMIC SENATE REPRESENTATIVES

This committee of representatives of the Academic Senates of the three segments of public higher education in California began initial deliberations of issues of mutual concern to the faculty of the three segments in 1979-80. In December, 1980, the committee set highest priority on the issue of greatest concern--preparation in English and mathematics. Subsequently, the committee developed a draft statement on competencies in English and mathematics, invited critical review by the committees of the three Academic Senates, engaged in extensive consultation with other segments of education in California--including high school and college teachers of English and mathematics and administrators and parents--and, finally, prepared this document. The principles of the document have been endorsed by the Academic Senate of the California Community Colleges, and the document has been endorsed by the Academic Senates of The California State University and the University of California. The members of the Intersegmental Committee who participated in the development of this document are:

Benjamin Aaron, Past Chair, University of California Academic Council and Assembly of the Academic Senate. University of California, Los Angeles

Henry L. Alder, Chair, University of California Board of Admissions and Relations with Schools. University of California, Davis

Leon Baradat, Former President, Academic Senate for the California Community Colleges; Chair, Educational Policy Committee. Mira Costa College

Norbert Bischof, Former President, and Member, Executive Committee, Academic Senate for the California Community Colleges. Merritt College

William E. Broen, Jr., Past Chair, University of California Board of Admissions and Relations with Schools. University of California, Los Angeles

Robert E. Connick, Vice Chair, University of California Academic Council and Assembly of the Academic Senate. University of California, Berkeley

Philip C. Curtis, Jr., Chair, UC/CSU Workgroup on Diagnostic Testing in Pre-Calculus Mathematics; Chair, Board of Admissions and Relations with Schools Subcommittee on Articulation with High Schools. University of California, Los Angeles.

Tyra Duncan-Hall, Past President, Academic Senate for the California Community Colleges. San Francisco City College

Yvette Fallandy, Past Chair, Academic Senate Credit and Curriculum Committee, The California State University. Sonoma State University

Tony Gilleran, Member, Executive Committee, Academic Senate for the California Community Colleges. Santa Barbara City College

Thomas Hale, Member, Academic Senate Educational Policies Committee, The California State University. California Polytechnic State University, San Luis Obispo

Lyman H. Heine, Chair, Academic Senate Educational Policies Committee, The California State University. California State University, Fresno

Barbara W. Hinkley, President, Academic Senate for the California Community Community Colleges. Palomar College

Oliver A. Johnson, Chair, University of California Academic Council and Assembly of the Academic Senate. University of California, Riverside

Robert D. Kully, Chair, Academic Senate, California State University. California State University, Los Angeles

Russell E. Orpet, Member, Academic Senate Credit and Curriculum Committee, The California State University. California State University, Long Beach

W. Gary Sitton, Chair, Academic Senate Credit and Curriculum Committee, The California State University. California State University, Chico

Maryamber Villa, Past Chair, Educational Policy Committee, Academic Senate for the California Community Colleges. Los Angeles Valley College

Carl P. Wagoner, Vice Chair, Academic Senate, The California State University. California State College, San Bernardino

APPENDIX VI

ACKNOWLEDGMENTS

A previous draft of these statements was distributed for comment to secondary and postsecondary eduational organizations, including the Association of California School Administrators; the Association of California Urban School Districts; the California Association of Teachers of English; the California Congress of Parents, Teachers, and Students, Inc.; the California State Department of Education; the Coalition for Intermediate and Secondary Education Improvement; the Educational Congress of California; and the Liaison Committee on English and the Liaison Committee on Mathematics of the Articulation Council of California. Individual meetings were held with a number of these organizations to discuss the statements. Comments and suggestions from members of these organizations were carefully considered and were of value in writing this final document.

ENGLISH

In addition to acknowledgments made elsewhere, the development of the sections on English in this statement has been aided by the availability of The California State University's publication, CSU English Tests, and the University of California's publication, University of California Proficiency Examination in English Composition. The Academic Senates also wish to acknowledge the assistance of the following individuals who critically reviewed drafts of the material on English competencies. These individuals are not responsible for the content of this final document.

Alice Brekke, Faculty Coordinator for Writing Skills Programs, The California State University. Professor of English, California State University, Long Beach

James Cagnacci, Past Chair, Department of English, City College of San Francisco. President, English Council for California Two-Year Colleges

John Callen, Department of English, City College of San Francisco

Katherine Carter, Chair, Department of English, California State University, Los Angeles

Charles R. Cooper, Department of Literature, University of California, San Diego. Past Chair, University Committee on Subject A

Kimberly S. Davis, Supervisor, Subject A Department, University of California, Berkeley

Mark G. Edelstein, Department of English, Palomar College, San Marcos

George Gadda, Testing Coordinator and English 3 Advisor,UCLA Writing Programs, University of California, Los Angeles

James Gray, Head, Bay Area Writing Project, University of California, Berkeley

Carol Hartzog, Assistant Director, UCLA Writing Programs, University of California, Los Angeles

Julie Swan Hatoff, Past Chair, Department of English, Mira Costa College, Oceanside. President, Mira Costa College Academic Senate. Member, English Council for California Two-Year Colleges

Vernon T. Hornback, Jr., Chair, Department of English, California State University, Sacramento. Former Chair, CSU English Council

Richard A. Lanham, Director, UCLA Writing Programs, University of California, Los Angeles

Jonnah Laroche, Past Chair, Department of English, Allan Hancock College, Santa Maria. Vice President, Academic Senate for the California Community Colleges

Eileen Lothamer, Professor of English, California State University, Long Beach. Former Chair, CSU English Council

John C. Lovas, Language Arts Division, DeAnza College, Cupertino

Charles E. May, Chair, Department of English, California State University, Long Beach. Chair, CSU English Council

Mary McEdwards, Department of Speech Communication, California State University, Northridge

Robert M. Mognia, Department of English, Modesto Junior College

Linda Morris, Director of Composition, Department of English, University of California, Davis

Jane Stanbrough, Coordinator, Student Preparation and Communications Services, University of California, Systemwide Administration, Berkeley

Patricia Taylor, Programs Officer, UCLA Writing Programs, University of California, Los Angeles

Joan Wilson, Department of English, City College of San Francisco

Karl F. Zender, Past Director of Composition, Vice Chair, Department of English, University of California, Davis

MATHEMATICS

In addition to acknowledgments made elsewhere, the recommendations for college-preparatory programs in mathematics and detailed specifications of topics to be covered were developed in cooperation with the UC/CSU Workgroup on Diagnostic Testing in Pre-Calculus Mathematics. The sample problems in mathematics (Appendix IV) were also prepared by this group. The members of this workgroup, consisting of UC and CSU faculty members in mathematics, chemistry, and physics and high school and community college faculty members in mathematics, are:

Robert Blackburn, George Washington High School, Los Angeles

James Caballero, Santa Monica High School, Santa Monica

Joseph Casanova, California State University, Los Angeles

Philip C. Curtis, Jr., Workgroup Chair, University of California, Los Angeles

Wallace Etterbeek, California State University, Sacramento

Vivian Freedman, Statistical Analyst, University of California, Los Angeles

Alan Greene, California State College, Bakersfield

Eloia M. Irvin, John F. Kennedy High School, Richmond

Alfred Manaster, University of California, San Diego

Gerald Marley, Workgroup Vice Chair, California State University, Fullerton

Robert Mattison, Coordinator, UC/CSU Mathematics Diagnostic Testing Project, University of California, Systemwide Administration, Berkeley

David R. Morin, East Los Angeles College, Monterey Park

Rollie J. Myers, University of California, Berkeley

Paraskevi Steinberg, John F. Kennedy High School, Sacramento

Brandon Wheeler, Los Rios Community College District, Sacramento

The help from high school teachers of mathematics who reviewed this document in two in-service review courses at UCLA, Summer, 1981, is also acknowledged.

ERIC Clearinghouse for Junior Colleges

DEC 3 1982